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THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

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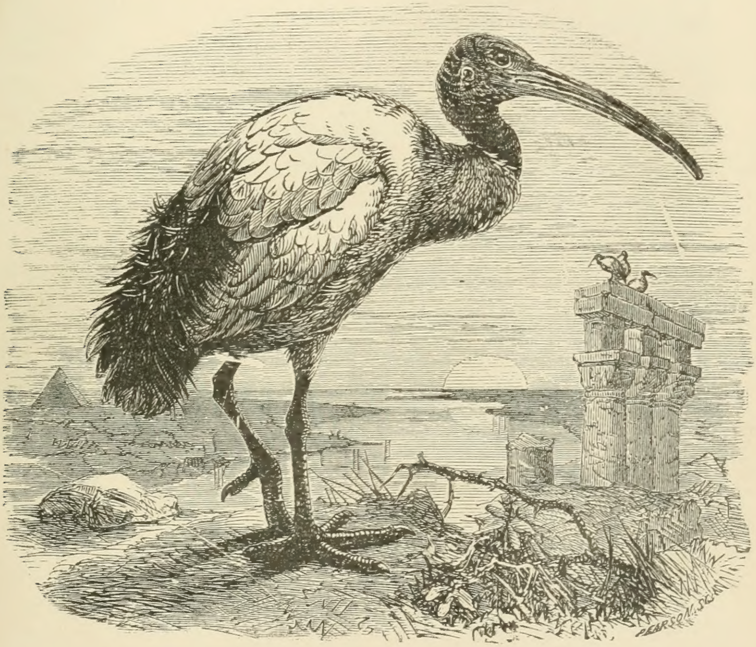
EDITED BY
PHILIP LUTLEY SCLATER, D.Sc., F.R.S.,
AND
A. H. EVANS, M.A., F.Z.S.



VOL. IV. 1910.

NINTH SERIES.

Delectasti me, Domine, in operibus manuum tuarum.

LONDON:
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ALERE FLAMMAM.

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PREFACE.

On concluding the Fifty-second Volume of 'The Ibis' by the issue of the Two-hundred-and-fifth Number, we have again to acknowledge the unfailing support that we have received from our contributors. We have, in fact, been obliged to defer to the next volume some of the communications lately sent to us. But an octavo book, if of more than seven hundred pages (besides twelve plates), becomes rather inconvenient to handle.

We may venture to call attention to Mr. Bucknill's article in this volume on the Birds of Cyprus as likely to be of special interest to students of the Western Palæarctic Avifauna. Much, it is true, was already known to us of the birds of that interesting Island, but Mr. Bucknill has furnished us with an excellent general summary of our knowledge of its Avifauna, and, as he has returned to his official work in Cyprus, will, we are sure, not fail to continue his observations on its bird-life.

Two other contributors to the present volume, Mr. S. A. Neave and Mr. D. Carruthers, have again left England for foreign countries: Mr. Neave has gone to East Africa, Mr. Carruthers to Central Asia. Both of these gentlemen are good observers and energetic collectors, and we may expect to learn much from the results of their expeditions.

In the course of the next few months also we may well hope that the party sent out by our Union under Mr. Walter Goodfellow's guidance, though its progress has been hitherto somewhat slow, will have established itself high up in the mountains of Central New Guinea, and will have sent us some intelligence of the natural products of what is believed to be the largest unexplored area on the world's surface except the Polar circles.

P. L. S.
A. H. E.

Offices of the
Zoological Society of London,
Regent's Park,
London, N.W.,
October 1st, 1910.

LIST OF THE MEMBERS

OF THE

BRITISH ORNITHOLOGISTS' UNION.

1910.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1888. Aplin, Oliver Vernon; Stonehill House, Bloxham, Oxon.

1896. Archibald, Charles F.; 2 Darnley Road, West Park, Leeds.

1896. Arrigoni degli Oddi, Count Ettore, Professor of Zoology, University, Padua; and Ca' oddo, Monselice, Padua, Italy.

1901. Arundel, Major Walter B., F.Z.S.; High Ackworth, Pontefract.

5 1901. Ashby, Herbert; Oakwood Lodge, Chandler's Ford, near Southampton.

1908. Ashworth, Dr. John Wallwork, M.R.C.S., L.R.C.P., F.R.G.S., F.G.S.; Thorne Bank, Heaton Moor, near Stockport.

1897. Astley, Hubert Delaval, M.A., F.Z.S.; Benham Park, Newbury, Berks.

1885. Backhouse, James, F.Z.S.; Daleside, Scarborough, Yorks.

1904. Bahr, Philip Heinrich, M.A., M.B., M.R.C.S., L.R.C.P., F.Z.S.; Perrysfield House, Oxted, Surrey.

10 1901. Bailward, Col. Arthur Churchill, F.Z.S. (R.F.A.); 64 Victoria Street, S.W.

1892. Baker, E. C. Stuart, F.Z.S.; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.; and Shillong, Assam, India.

1901. Baker, John C., M.B., B.A.; Ceely House, Aylesbury, Bucks.

1908. Ball, Crispin Alfred (Sudan Civil Service); Geteina, White Nile Province, Sudan.

1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone.

15 1906. Bannerman, David A., B.A.; 11 Washington House, Basil Street, S.W.

1890. Barclay, Francis Hubert, F.Z.S.; The Warren, Cromer, Norfolk.

Date of Election.

1910. Barclay, Lt.-Col. Hubert Frederick, F.Z.S.; Dursley, St. Albans, Herts.

1885. Barclay, Hugh Gurney, F.Z.S.; Colney Hall, Norwich.

1889. Barrett-Hamilton, Major Gerald E. H., F.Z.S. (5th Royal Irish Rifles); Kilmanock, Campile, Ireland.

20 1881. Barrington, Richard Manliffe, LL.D.; Fassaroe, Bray, Co. Wicklow.

1903. Bartels, Max.; Pasir Datar, Halte Tjisaät (Preanger), Java, Dutch East Indies.

1906. Bates, George L., C.M.Z.S.; Kribi, Kamerun, West Africa.

1908. Beaumont, Walter Ibbotson, F.Z.S.; 1 Osborne Place, Plymouth.

1902. Becher, Harry, C.E.; Beechwood Cottage, Burnham-on-Crouch.

25 1910. Beeston, Harry; Sunnymead, South Street, Havant, Hants.

1897. Benson, John; The Post Office, Vancouver, B.C.

1897. Berry, William, B.A., LL.B.; Tayfield, Newport, Fifeshire.

1907. Bethell, The Hon. Richard; 30 Hill Street, Mayfair, W.

1907. Bickerton, William, F.Z.S.; The Hawthorns, Marlborough Road, Watford, Herts.

30 1880. Bidwell, Edward; 1 Trig Lane, Upper Thames Street, E.C.

1892. Bird, The Rev. Maurice C. H., M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

1891. Blaauw, Frans Ernst, C.M.Z.S.; Gooilust, 'sGraveland Hilversum, Noord-Holland.

1903. Blathwayt, The Rev. Francis Linley, M.A.; Doddington Rectory, Lincoln.

1897. Bonar, The Rev. Horatius Ninian, F.Z.S.; Saltoun, Pencaitland, N.B.

35 1905. Bone, Henry Peters, F.Z.S.; 28 Adelaide Crescent, Brighton.

1894. Bonhote, John Lewis, M.A., F.L.S., F.Z.S.; Gade Spring Lodge, Hemel Hempstead, Herts. (*Secretary & Treasurer.*)

1906. Boorman, Staines; Heath Farm, Send, Woking, Surrey.

1898. Booth, George Albert; 6 North Road, Preston; and Fern Hill, Grange-over-Sands, Lancs.

1904. Booth, Harry B.; Ryhill, Ben Rhydding, *viâ* Leeds, Yorks.

40 1907. Boraston, John Maclair; Ingleside, Stretford, near Manchester.

1908. Borrer, Clifford Dalison; 6 Durham Place, Chelsea, S.W.

1910. Brabourne, Wyndham Wentworth, Lord (Grenadier Guards); 19 Curzon Street, W.

Date of Election.

1895. Bradford, John Rose, M.D., D.Sc., F.R.S., F.Z.S; 8 Manchester Square, W.

1902. Bridgeman, Commdr. The Hon. Richard O. B., R.N.; Weston Park, Shifnal, Salop; and H.M.S. 'Redbreast,' East India Station.

45 1909. Briggs, Thomas Henry, M.A., F.E.S.; Rock House, Lynmouth, R.S.O., N. Devon.

1902. Bristowe, Bertram Arthur; The Cottage, Stoke D'Abernon, Surrey.

1885. Brockholes, William Fitzherbert; Claughton-on-Brock Garstang, Lancashire.

1908. Brook, Edward Jonas, F.Z.S.; Hoddam Castle, Ecclefechan, N.B.

1890. Brooke, Harry Brinsley; 33 Egerton Gardens, S.W.

50 1899. Brooke, John Arthur, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.

1900. Bruce, William Speirs, LL.D., F.R.S.E.; Scottish Oceanographical Laboratory, Surgeon's Hall, Edinburgh.

1907. Buckley, Charles Mars; 4 Hans Crescent, S.W.

1906. Bucknill, The Hon. John Alexander Strachey, M.A., F.Z.S.; Kioshly Chiftlik, Nicosia, Cyprus; and Hylands House, Epsom, Surrey.

1895. Bulgaria, H.M. Ferdinand, King of, F.Z.S.; The Palace, Sofia, Bulgaria.

55 1908. Bunyard, Percy Frederick, F.Z.S.: 57 Kidderminster Road, Croydon, Surrey.

1907. Butler, Arthur Gardiner, Ph.D., F.L.S., F.Z.S.; 124 Beckenham Road, Beckenham, Kent.

1899. Butler, Arthur Lennox, F.Z.S.; Superintendent of Game Preservation, Sudan Government, Khartum, Sudan.

1884. Butler, Lieut.-Col. E. A.; Winsford Hall, Stokesby, Great Yarmouth.

1896. Butterfield, W. C. J. Ruskin; Curator of the Corporation Museum, Brassey Institute, Hastings.

60 1900. Buttress, Bernard A. E.; Craft Hill, Dry Drayton, Cambridge.

1905. Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

1884. Buxton, Geoffrey Fowell, F.Z.S.; Dunston Hall, Norwich.

1896. Cade, Francis J.; Mosborough, The Park, Cheltenham.

1889. Cameron, Ewen Somerled, F.Z.S.; Fallon, Montana, U.S.A.

Date of
Election.

65 1896. Cameron, Capt. James S.; (2nd Bn. Royal Sussex Regt.) Low Wood, Bethersden, Ashford, Kent.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

1892. Campbell, Charles William, C.M.G., C.M.Z.S., H.B.M. Chinese Consular Service; British Legation, Peking, China.

1909. Campbell, David Callender, J.P.; Templemore Park, Londonderry, Ireland.

1909. Carroll, Clement Joseph; Rocklow, Fethard, Co. Tipperary, Ireland.

70 1904. Carruthers, Alexander Douglas M.; Little Munden Rectory, Ware, Herts.

1908. Carter, Thomas; Wensleydale, Broome Hill (Great Southern Railway), Western Australia.

1890. Cave, Charles John Philip, M.A., F.Z.S.; Ditcham Park, Petersfield, Hants.

1894. Chance, A. Macomb, M.A.; 9 Hermitage Road, Edgbaston, Birmingham.

1884. Chapman, Abel, F.Z.S.; Houxty, Wark-on-Tyne.

75 1907. Chapman, Edward Henry; 3 Hare Court, Temple, E.C.

1882. Chase, Robert William; Pool Hall, Wishaw, near Birmingham.

1908. Cheesman, Robert E.; Tilsden, Cranbrook.

1897. Cholmley, Alfred John, F.Z.S.; c/o Mr. R. H. Porter, 7 Princes Street, Cavendish Square, W.; and Newton Hall, Rillington, Yorks.

1910. Chubb, Charles, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

80 1904. Clarke, Capt. Goland van Holt, D.S.O., F.Z.S. (18th Hussars); Chilworth Court, Romsey, Hants.

1889. Clarke, Lt.-Col. Stephenson Robert, F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Royal Scottish Museum, Edinburgh.

1904. Cochrane, Commdr. Henry Lake, R.N.; 30 Drayton Gardens, S.W.

1898. Cocks, Alfred Heneage, M.A., F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames.

85 1895. Coles, Richard Edward; Ashley Arnewood, New Milton, S.O., Hants.

Date of Election.

1904. Collier, Charles, F.Z.S.; Clieveden House, 21 Eaton Terrace, S.W.

1909. Congreve, William Maitland (Lieut. R.A.); R.A.Mess, Europa, Gibraltar; and Breinton House, near Hereford.

1910. Conigrave, Charles Price, F.R.G.S.; Suburban Road, South Perth, Western Australia.

1888. Cordeaux, Major William Wilfrid, (late 21st Lancers), Hopebourne, Harbledown, Canterbury.

90 1896. Cowie, Col. Alexander Hugh, R.E., F.Z.S.; Uddens House, Wimbourne, Dorset.

1894. Crewe, Sir Vauncey Harpur, Bt.; Calke Abbey, Derby.

1898. Crossman, Alan F., F.Z.S.; Cumminin Station, near Doodlakine, Western Australia.

1903. Crowley, John Cyril, M.A.; 5 Beech House Road, Croydon.

1898. Crowley, Reginald Alwyn; Foords Farm, Horsham, Sussex; and 22 High Street, Croydon.

95 1899. Curtis, Frederick, F.R.C.S.; Lyndens, Redhill, Surrey.

1877. Dalgleish, John J.; Brankston Grange, Bogside Station, Alloa, N.B.

1896. Danford, Capt. Bertram W. Y., R.E.; Bermuda.

1897. Darnley, Ivo Francis Walton, Earl; Cobham Hall, Gravesend; and Clifton Lodge, Athboy, Co. Meath.

1883. Davidson, James, F.Z.S.; 32 Drumsheugh Gardens, Edinburgh.

100 1908. Davies, Claude G.; 'E' Squadron, Cape Mounted Riflemen, Matatiele, E. Griqualand, South Africa.

1905. Davis, Kenneth James Acton; Julian Hill, Harrow; and King's College, Cambridge.

1909. Delmé-Radcliffe, Capt. Alfred (105th Maratha Light Infantry); Satara, Deccan, India; and c/o Messrs. Cox & Co., 16 Charing Cross, S.W.

1902. Dent, Charles Henry; c/o Messrs. Barclay & Co. Ltd., Darlington.

1891. De Vis, Charles W.; Queensland Museum, Brisbane; and care of Mr. B. Quaritch, 11 Grafton Street, W.

105 1893. De Winton, William Edward, F.Z.S.; Southover Hall, Burwash, Sussex.

1896. Dobbie, James Bell, F.R.S.E., F.Z.S.; 12 South Inverleith Terrace, Edinburgh.

Date of Election.

1889. DOBIE, WILLIAM HENRY, M.R.C.S.; 2 Hunter Street, Chester.

1904. DORRIEN-SMITH, THOMAS ALGERNON, J.P., D.L.; Tresco Abbey, Scilly Isles.

1904. DRAKE-BROCKMAN, Dr. RALPH EVELYN, M.R.C.S., L.R.C.P., F.Z.S.; Cheriton, Wellington Road, Bournemouth.

110 1865. DRESSER, HENRY EELES, F.L.S., F.Z.S.; 44 Hornton Court, Kensington, W.

1896. DREWITT, FREDERIC DAWTREY, M.A., M.D., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W.

1890. DRUMMOND-HAY, Col. JAMES A. G. R.- (Coldstream Guards); Seggieden, by Perth, N.B.

1904. DUCKWORTH, GEORGE HERBERT; 35 Charles Street, Berkeley Square, W.

1878. DURNFORD, W. ARTHUR, J.P.; Elsecar, Barnsley.

115 1905. DUTTON, The Hon. and Rev. Canon FREDERICK GEORGE; Bibury, Fairford.

1903. EARLE, EDWARD VAVASOUR; 4 Broad Street Place, E.C.

1895. ELLIOT, EDMUND A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

1884. ELLIOTT, ALGERNON, C.I.E.; 16 Belsize Grove, Hampstead, N.W.

1902. ELLISON, The Rev. ALLAN, M.A.; Ardoyne House, Watton, Hertford.

120 1904. ELTON, HENRY BROWN, B.A., M.B., B.C., M.R.C.S., L.R.C.P.; Southwell, Taunton, Somerset.

1866. ELWES, HENRY JOHN, F.R.S., F.Z.S.; Colesborne, Cheltenham.

1879. EVANS, ARTHUR HUMBLE, M.A., F.Z.S.; 9 Harvey Road, Cambridge. (*Joint Editor.*)

1888. EVANS, WILLIAM, F.R.S.E.; 38 Morningside Park, Edinburgh.

1905. EWEN, GUY L'ESTRANGE (King's Messenger); St. James's Club, Piccadilly, W.

125 1892. FAIRBRIDGE, WILLIAM GEORGE; 141 Long Market Street, Capetown, South Africa.

1909. FANSHAWE, Capt. RICHARD D. (late Scots Guards); Adbury Holt, Newbury, Berks.

1894. FARQUHAR, Rear-Admiral ARTHUR MURRAY, C.V.O.; Granville Lodge, Aboyne, N.B.

Date of Election.

1898. FARQUHAR, Capt. STUART ST. J., R.N.; Naval & Military Club, Piccadilly, W.

1873. FEILDEN, Col. HENRY WEMYSS, C.B., C.M.Z.S.; Burwash, Sussex; and Junior United Service Club, S.W.

130 1901. FINLINSON, HORACE W., F.Z.S.; 5 Rosamond Road, Bedford.

1892. FINN, FRANK, B.A., F.Z.S.; 36 St. George's Road, Regent's Park, N.W.

1902. FLOWER, Capt. STANLEY SMYTH, F.Z.S.; Kedah House, Zoological Gardens, Giza, Egypt.

1884. FORBES, HENRY OGG, LL.D., F.Z.S.; Free Public Museums, Liverpool.

1903. FOSTER, NEVIN HARKNESS; Hillsborough, Co. Down, Ireland.

135 1880. FOSTER, WILLIAM; 39 Colville Gardens, Bayswater, W.

1887. FOWLER, WILLIAM WARDE, M.A.; Lincoln College, Oxford.

1865. FOX, The Rev. HENRY ELLIOTT, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. FREKE, PERCY EVANS; Southpoint, Limes Road, Folkestone.

1895. FROHAWK, FREDERICK WILLIAM; Ashmount, Rayleigh, Essex.

140 1909. FROST, WILLIAM EDWARD, J.P.; Ardvreck, Crieff, Perthshire.

1881. GADOW, HANS, Ph.D., F.R.S., F.Z.S.; University Museum of Zoology, Cambridge.

1886. GAINSBOROUGH, CHARLES WILLIAM FRANCIS, Earl of; Exton Park, Oakham.

1907. GANDOLFI, ALFONSO OTHO GANDOLFI-HORNYOLD, Duke, Ph.D.; Blackmore Park, Hanley Swan, Worcestershire.

1900. GARNETT, CHARLES; 9 Cleveland Gardens, Hyde Park, W.; and New University Club, St. James's Street, S.W.

145 1892. GERRARD, JOHN, Government Inspector of Mines; Worsley, near Manchester.

1902. GIBBINS, WILLIAM BEVINGTON, F.Z.S.; Ettington, Stratford-on-Avon.

1879. GIBSON, ERNEST, F.L.S., F.Z.S., F.R.G.S.; 25 Cadogan Place, S.W.; and c/o Messrs. Fraser, Stodart & Ballingall, 16 Castle Street, Edinburgh.

1902. GILLETT, FREDERICK, F.Z.S.; Shootfield House, Sundridge, Suffolk.

1902. GILLMAN, ARTHUR RILEY, F.Z.S.; Heath Vale, Farnham, Surrey.

150 1904. GILROY, NORMAN; 95 Claremont Road, Forest Gate, E.; and Seaford, Sussex.

Date of
Election.

1903. Gladstone, Hugh Steuart, M.A., F.Z.S.; Capenoch, Thornhill, Dumfriesshire.

1908. Godman, Capt. Edward Shirley (2nd Dorset Regiment); Muntham, Horsham.

* 1858. Godman, Frederick DuCane, D.C.L., F.R.S., F.Z.S.; 45 Pont Street, S.W. (*President.*) (*Gold Medallist.*)

* 1858. Godman, Percy Sanden, B.A., C.M.Z.S.; Muntham, Horsham. (*Gold Medallist.*)

155 1906. Goodall, Jeremiah Matthews, F.Z.S.; 52 Oxford Gardens, North Kensington, W.

1901. Goodchild, Herbert; 66 Gloucester Road, Regent's Park, N.W.

1900. Goodfellow, Walter, F.Z.S.; Mont Fleuri, Southbourne Grove, Bournemouth.

1906. Gordon, Seton Paul, F.Z.S.; Auchintoul, Aboyne, N.B.

1899. Gould, Frank Herbert Carruthers, F.Z.S.; Matham Manor House, East Molesey, Surrey.

160 1895. Grabham, Oxley, M.A.; The Museum, York.

1909. Grant, Claud Henry Baxter, F.Z.S.; 30 Wimbledon Park Road, West Hill, S.W.

1909. Grey, The Rt. Hon. Sir Edward, Bt., P.C., M.P., F.Z.S.; Falloden, Christon Bank, R.S.O., Northumberland.

1906. Griffith, Arthur Foster; 59 Montpellier Road, Brighton.

1885. Guillemard, Francis Henry Hill, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

165 1876. Günther, Albert C. L. G., M.A., M.D., F.R.S., F.Z.S.; 2 Lichfield Road, Kew Gardens, S.W.

1908. Gurney, Gerard Hudson, F.Z.S., F.E.S.; Keswick Hall, Norwich.

1870. Gurney, John Henry, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W.

1896. Gurney, Robert; Ingham Old Hall, Stalham, Norfolk.

1890. Gwatkin, Joshua Reynolds Gascoign; The Manor House, Potterne, Devizes.

170 1891. Haigh, George Henry Caton; Grainsby Hall, Great Grimsby, Lincolnshire.

1887. Haines, John Pleydell Wilton; 17 King Street, Gloucester.

1898. Hale, The Rev. James Rashleigh, M.A.; Boxley Vicarage, Maidstone, Kent.

1905. Hamerton, Capt. Albert Edward, D.S.O., R.A.M.C., F.Z.S.; c/o Messrs. Holt & Co., 3 Whitehall Place, S.W.

Date of Election.

1904. Harington, Major Herbert Hastings; 92nd Punjabis, Mandalay, Upper Burma; and c/o Messrs. Thos. Cook & Sons, Ludgate Circus, E.C.

175 1900. Harper, Edmund William, F.Z.S.; 6 Ashburnham Road, Bedford.

1900. Harris, Henry Edward; 2 St. Aubyn's Mansions, Hove, Brighton.

1893. Hartert, Ernst J. O., Ph.D., F.Z.S.; The Zoological Museum, Tring, Herts.

1868. Harting, James Edmund, F.L.S., F.Z.S.; Edgewood, Weybridge, Surrey.

1893. Hartmann, William; Milburn, Esher, Surrey.

180 1899. Harvey, Major Robert Napier, R.E.; Broxhead Cottage, Bordon Camp, Hants.

1873. Harvie-Brown, John A., F.R.S.E., F.Z.S.; Dunipace House, Larbert, Stirlingshire, N.B.

1900. Hasluck, Percy Pedley Harford; The Wilderness, Southgate, N.

1902. Hatfeild, John Randall; Edlington Hall, Horncastle, Lincolnshire.

1898. Hawker, Richard Macdonnell, F.Z.S.; Bath Club, Dover Street, W.; and c/o Messrs. Dalgety & Co., 96 Bishopsgate Street Within, E.C.

185 1905. Hawkshaw, John Clarke, M.A., M.I.C.E., F.Z.S., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W.

1905. Headley, Frederick Webb, M.A., F.Z.S.; Haileybury College, Herts.

1907. Hedges, George Mitchell; 42 Kensington Park Gardens, W.

1905. Hellmayr, Carl E.; Wittelsbacherstrasse 2 III., Munich, Germany.

1902. Hett, Geoffrey Seccombe, F.Z.S.; 8 Wimpole Street, W.

190 1899. Heywood, Richard, F.Z.S.; Narside, Narborough, Swaffham, Norfolk.

1900. Hills, John Waller, M.P.; Queen Anne's Mansions, Westminster, S.W.; and Highhead Castle, Carlisle.

1884. Holdsworth, Charles James, J.P.; Fernhill, Alderley Edge, Cheshire.

1905. Hopkinson, Emilius, M.B., D.S.O., F.Z.S.; 45 Sussex Square, Brighton; and Medical Officer, Gambia, West Africa.

Date of Election.

1904. Horsbrugh, Major Boyd Robert, F.Z.S. (Army Service Corps); Morristown Biller, Newbridge, Co. Kildare, Ireland.

195 1888. Horsfield, Herbert Knight; Crescent Hill, Filey, Yorks.

1895. Howard, Henry Eliot, F.Z.S.; Clarelands, near Stourport.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

1869. Hume, Allan Octavian, C.B., C.S.I., F.Z.S.; The Chalet, 4 Kingswood Road, Upper Norwood, S.E.

1890. Hunter, Henry Charles Vicars, F.Z.S.; Abermarlais Park, Llangadock, Carmarthenshire.

200 1901. Ingram, Collingwood; The Bungalow, Westgate-on-Sea.

1902. Innes Bey, Dr. Walter Francis; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.

1888. Jackson, Frederick John, C.B., C.M.G., F.Z.S., F.L.S.; Uganda, British East Africa; and The Red House, Aldeburgh, Suffolk.

1892. James, Henry Ashworth, F.Z.S.; Hurstmonceux Place, Hailsham, Sussex.

1896. Jesse, William, F.Z.S.; Meerut College, Meerut, India.

205 1889. Johnson, Frederick Ponsonby, B.A., J.P., D.L.; Castlesteads, Brampton, Cumberland.

1891. Johnston, Sir Harry Hamilton, G.C.M.G., K.C.B., F.Z.S.; St. John's Priory, Poling, near Arundel, Sussex.

1905. Johnstone, Edwin James, F.Z.S.; Burrswood, Groombridge, Sussex; and Junior Carlton Club, Pall Mall, S.W.

1900. Jones, Major Henry, F.Z.S. (late 62nd Regt.); East Wickham House, Welling, Kent.

1909. Jones, Staff-Surgeon Kenneth Hurlstone, M.B., Ch.B., F.Z.S., R.N.; The Manor House, St. Stephen's, Canterbury, Kent.

210 1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashburne, Derbyshire.

1902. Joy, Norman Humbert, M.R.C.S., L.R.C.P.; Thurlestone, Bradfield, near Reading.

1880. Kelham, Col. Henry Robert, C.B. (late Highland Light Infantry); Army and Navy Club, Pall Mall, S.W.

1894. Kelsall, Major Harry Joseph, R.A.; Golden Hill, Freshwater, Isle of Wight.

1897. Kelsall, The Rev. John Edward, M.A.; Milton Rectory, New Milton, Hants.

Date of Election.

215 1904. Kelso, John Edward Harry, M.D.; Holmwood, Hayling Island, Hants.

1891. Kerr, John Graham, F.Z.S., Regius Professor of Zoology, 9 The University, Glasgow.

1895. Kingsford, William Edward; Cairo, Egypt.

1902. Kinnear, Norman Boyd; Bombay Natural History Society, 6 Apollo Street, Bombay, India.

1910. Kloss, Cecil Boden, F.Z.S., F.R.A.I.; Curator of the Perak State Museum, Taiping, Perak, Federated Malay States.

220 1882. Knubley, The Rev. Edward Ponsonby, M.A.; Steeple Ashton Vicarage, Trowbridge, Wilts.

1900. Koenig, Dr. Alexander Ferdinand; Coblenzer-Strasse 164, Bonn, Germany.

1906. Kollibay, Paul; Ring 12 I, Neisse, Germany.

1892. Laidlaw, Thomas Geddes; Bank of Scotland, Duns, N.B.

1884. Langton, Herbert; 11 Marlborough Place, Brighton.

225 1881. Lascelles, The Hon. Gerald William, F.Z.S.; The King's House, Lyndhurst.

1892. La Touche, John David Digues, C.M.Z.S.; c/o Custom House, Chinkiang, China (*viâ* Siberia).

1898. Learoyd, A. Ernest; Kirkgate Buildings, Huddersfield, Yorks.

1910. Lees, T. Hastings, M.A.; 4 Osnaburgh Terrace, Regent's Park, N.W.

1905. Legge, The Hon. Gerald; c/o Messrs. Hoare, 37 Fleet Street, E.C.

230 1905. Leigh, Henry Boughton; Brownsover Hall, Rugby.

1906. Leigh, John Hamilton, F.Z.S.; Matcham's Park, Ringwood, Hants.

1898. Le Souëf, Dudley, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.

1868. Le Strange, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk; and 1 Eaton Place, Eaton Square, S.W.

1889. Leyland, Christopher John, F.Z.S.; Haggerston Castle, Beal, Northumberland.

235 1897. Lilford, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

1909. Lings, George Herbert; Barciecroft, Burnage, Didsbury, Manchester.

1897. Lodge, George Edward, F.Z.S.; The Studios, 5 Thurloe Square, S.W.

Date of Election.

1908. Long, Sydney Herbert, M.D.; 37 St. Giles Street, Norwich.

1905. Lovat, Lt.-Col. Simon Joseph, Lord, C.B., K.C.V.O., D.S.O., F.Z.S.; Beaufort Castle, Beauly, Inverness-shire.

240 1904. Lowe, Dr. Percy R.; c/o Sir Frederic Johnstone, Bt., The Hatch, Windsor.

1889. Loyd, Lt.-Col. Arthur Purvis, F.Z.S. (late 21st Hussars); Hurst Lodge, Sunningdale, Berks.

1902. Lucas, Auberon Thomas, Lord, F.Z.S.; 7 Cleveland Row, St. James's, S.W.

1877. Lumsden, James, F.Z.S.; Arden House, Arden, Dumbartonshire, N.B.

1908. Lyell, Charles Henry, M.P.; 48 Eaton Place, S.W.

245 1904. Lynes, Commander Hubert, R.N.; H.M.S. 'Cadmus,' China Station.

1900. McConnell, Frederick Vavasour; Camfield Place, Hatfield, Herts.

1905. McGregor, Peter James Colquhoun; H.B.M. Consul, British Consulate, Erzerum, Turkey in Asia.

1897. McLean, John Chambers; Te Karaka, Gisborne, New Zealand.

1899. Macmillan, George Augustin, F.Z.S.; 27 Queen's Gate Gardens, S.W.

250 1906. Macmillan, William Edward Frank; 27 Queen's Gate Gardens, S.W.

1909. Macnaghten, Norman Donnelly; Ministry of the Interior, Cairo, Egypt.

1894. Macpherson, Arthur Holte, F.Z.S.; 54 Cleveland Square, Hyde Park, W.

1906. Magrath, Major Henry Augustus Frederick; 51st Sikhs Frontier Force, Bannu, N.W.P., India; and c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

1907. Mann, Thomas Hugh, F.Z.S.; Trulls Hatch, Rotherfield, Sussex.

255 1908. Maples, Stuart; Lytton House, Stevenage, Herts.

1904. Mapleton, Harvey William, B.A.; Badgworth, Axbridge, Somerset.

1894. Marshall, Archibald McLean, F.Z.S.; Great Chitcombe, Brede, Sussex.

Date of Election.

1894. Marshall, James McLean, F.Z.S.: Bleaton Hallet, Blairgowrie, N.B.

1897. Mason, Col. Edward Snow; 10 Lindum Terrace, Lincoln.

260 1898. Massey, Herbert; Ivy Lea, Burnage, Didsbury, Manchester.

1907. Mathews, Gregory Macalister, F.L.S., F.Z.S.; Langley Mount, Watford, Herts.

1908. Mathews, Richard Owen; Langley Mount, Watford.

1896. Maxwell, The Rt. Hon. Sir Herbert Eustace, Bt., P.C., F.R.S.; Monreith, Whauphill, Wigtownshire, N.B.

1883. Meade-Waldo, Edmund Gustavus Bloomfield, F.Z.S.; Stonewall Park, Edenbridge, Kent.

265 1899. Meinertzhagen, Capt. Richard, F.Z.S.; Brookwood Park, Alresford, Hants.

1886. Millais, John Guille, F.Z.S.; Compton's Brow, Horsham.

1903. Mills, The Rev. Henry Holroyd, F.Z.S.; The Rectory, St. Stephen-in-Brannel, Grampound Road, Cornwall.

1879. Mitchell, Frederick Shaw; Hornshaws, Millstream, Vancouver Island, British Columbia.

1901. Mitchell, P. Chalmers, M.A., D.Sc., LL.D., F.R.S., F.Z.S.; Secretary to the Zoological Society of London, Regent's Park, N.W.

270 1908. Momber, A. R.; Magdalene College, Cambridge.

1898. Monro, Horace Cecil, C.B.; Queen Anne's Mansions, Queen Anne's Gate, S.W.

1900. Montagu, The Hon. Edwin Samuel, M.P., F.Z.S.; 12 Kensington Palace Gardens, W.

1906. Moore, Lt.-Col. Cyril H.; Regimental Accountant's Office, Colchester.

1886. Muirhead, George; Speybank, Fochabers, Moray, N.B.

275 1893. Mullens, Major William Herbert, M.A., LL.M., F.Z.S.; Westfield Place, Battle, Sussex.

1892. Munn, Philip Winchester, F.Z.S.; Laverstoke, Whitchurch, Hants.

1897. Munt, Henry, F.Z.S.; 10 Ashburn Place, South Kensington, S.W.

1910. Murray, Herbert Willaume; The Old House, Epsom.

1900. Musters, John Patricius Chaworth, D.L., J.P.; Annesley Park, Nottingham.

280 1907. Neave, Sheffield Airey, M.A., B.Sc., F.Z.S.; Mill Green Park, Ingatestone, Essex.

Date of Election.

1882. Nelson, Thomas Hudson; Seafield, Redcar, Yorkshire.

1895. Nesham, Robert, F.Z.S., F.E.S.; Utrecht House, Queen's Road, Clapham Park, S.W.

1897. Neumann, Professor Oscar, C.M.Z.S.; 2 Nollendorfplatz, Berlin, Germany.

1904. Newman, Thomas Henry, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.

285 1902. Nichols, John Bruce, F.Z.S.; Parliament Mansions, Victoria Street, S.W.

1900. Nichols, Walter Buchanan; Stour Lodge, Bradfield, Manningtree, Essex.

1876. Nicholson, Francis, F.Z.S.; The Knoll, Windermere.

1902. Nicoll, Michael John, F.Z.S.; Valhalla House, Zoological Gardens, Giza, Egypt.

1904. Noakes, Wickham; Selsdon Park, Croydon.

290 1895. Noble, Heatley, F.Z.S.; Temple Combe, Henley-on-Thames.

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; The Shrubbery, 72 Woodstock Road, Oxford.

1890. Ogilvie-Grant, William Robert, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

1907. Oldham, Charles, F.Z.S.; Essex House, Wellington Road, Watford.

295 1906. Osmaston, Bertram Beresford (Imperial Forest Service); Naini Tal, India.

1883. Parker, Henry, C.E.; Whitbourne Lodge, Manby Road, Great Malvern.

1880. Parkin, Thomas, M.A., F.L.S., F.Z.S.; Fairseat, High Wickham, Hastings.

1908. Paton, Edward Richmond, F.Z.S.; Brookdale, Grassendale, near Liverpool.

1891. Patterson, Robert, F.L.S., M.R.I.A.; Glenbank, Holywood, Co. Down.

300 1904. Pearse, Theed; Mentmore, Ampthill Road, Bedford.

1894. Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Notts.

1891. Pearson, Henry J., F.Z.S.; Bramcote, Notts.

1902. Pease, Sir Alfred Edward, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W.

Date of Election.

1898. Penn, Eric Frank; Taverham Hall, Norwich.

305 1891. Penrose, Francis George, M.D., F.Z.S.; Wick House, Downton, Salisbury, Wilts.

1900. Percival, Arthur Blayney, F.Z.S.; Game-Ranger, Nairobi, British East Africa Protectorate; and Somerset Court Brent Knoll, Somerset.

1907. Percy, Lord William; 2 Grosvenor Place, S.W.; and Alnwick Castle, Alnwick, Northumberland.

1886. Phillips, Ethelbert Lort, F.Z.S.; 79 Cadogan Square, S.W.

1888. Phillips, George Thorne; Wokingham, Berkshire.

310 1893. Pigott, Sir Thomas Digby, K.C.B.; The Lodge, Lower Sheringham.

1908. Player, W. J. Percy; The Quarr, Clydach, R.S.O., Glamorganshire.

1907. Pocock, Reginald Innes, F.L.S., F.Z.S.; Superintendent of the Zoological Gardens, Regent's Park, N.W.

1905. Pollard, Capt. Arthur Erskine St. Vincent (The Border Regiment); Haynford Hall, Norwich.

1896. Popham, Hugh Leyborne, M.A.; Hunstrete House, Pensford, near Bristol.

315 1898. Price, Athelstan Elder, F.Z.S.; 61 Great Cumberland Place, W.

1903. Proctor, Major Frederick William (late West Riding Regt.); Downfield, Maidenhead.

1901. Proud, John T.; Dellwood, Bishop Auckland, Durham.

1893. Pycraft, William Plane, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1888. Radclyffe, Charles Robert Eustace; Hyde, Wareham, Dorset.

320 1903. Ralfe, Pilcher George; The Parade, Castletown, Isle of Man.

1903. Ratcliff, Frederick Rowlinson; 24 Lancaster Gate, W.

1906. Rattray, Col. Rullion Hare; 68 Dry Hill Park Road, Tonbridge, Kent.

1879. Rawson, Herbert Evelyn; Comyn Hill, Ilfracombe.

1894. Read, Richard Henry, M.R.C.S., L.R.C.P.; Church Street, Hanley, Staffordshire.

325 1888. Read, Robert H.; 8*a* South Parade, Bedford Park, W.

1877. Reid, Capt. Philip Savile Grey, F.Z.S. (late R.E.); The Elms, Yalding, Maidstone.

Date of Election.

1903. Renaut, William E.; 4 Tenterden Street, Hanover Square, W.

1908. Richardson, Norman Frederic, F.Z.S.; Bradley Court, Mitcheldean, Gloucestershire; and Lynndale, Manor Road, Forest Hill, S.E.

1907. Richmond, Herbert William; King's College, Cambridge.

330 1895. Rickett, Charles Boughey, F.Z.S.; 13 St. Paul's Road, Clifton, Bristol.

1896. Rippon, Lt.-Col. George, F.Z.S.; 89th Punjabis, P.O. Kalaw, Southern Shan States, Upper Burma.

1907. Ritchie, Archibald Thomas Ayres; The Head Master's, Harrow; and Overstrand, near Cromer.

1902. Rivière, Bernard Beryl, F.R.C S.; St. Giles's Plain, Norwich.

1908. Robertson, Sir Henry Beyer, B.A.; Palé, Corwen, N. Wales.

335 1898. Robinson, Herbert C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.

1896. Rogers, Lt.-Col. John Middleton, D.S.O., F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.

1893. Rothschild, The Hon. Lionel Walter, D.Sc., Ph.D., M.P., F.Z.S.; The Zoological Museum, Tring, Herts.

1894. Rothschild, The Hon. Nathaniel Charles, M.A., F.Z.S.; Arundel House, Kensington Palace Gardens, W.

1910. Rücker, Sir Arthur William, M.A., D.Sc., LL.D., F.R.S.; Everington House, Newbury, Berks.

340 1907. Russell, Conrad George Edward, F.Z.S.; 2 Audley Square, W.

1910. Russell, Harold, F.Z S.; 16 Beaufort Gardens, S.W.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1903. Sandeman, Capt. Robert Preston (late 10th Hussars); Dan-y Parc, Crickhowell.

1889. Sapsworth, Arnold Duer, F.Z.S.; National Liberal Club, Whitehall Place, S.W.

345 1902. Sargeaunt, Arthur St. George; Exbury, Padstow, Cornwall.

1904. Sargent, James; 76 Jermyn Street, S.W.

1902. Saunders, William Henry Radcliffe, C.E.; The White Mansion, 91 York Street, Westminster, S.W.

Date of
Election.

1909. Savage, The Rev. Ernest Urmson; 129 Upper Canning Street, Liverpool.

1898. Scherren, Henry, F.Z.S.: 9 Cavendish Road, Harringay, N.

350 1907. Schwann, Geoffrey; 4 Prince's Gardens, S.W.

1905. Schwann, Harold, F.Z.S.; 11 Abingdon Gardens, Kensington, W.

* 1858. Sclater, Philip Lutley, D.Sc., F.R.S., F.Z.S.; Odiham Priory, Winchfield, Hants; and Athenæum Club, Pall Mall, S.W. (*Joint Editor.*) (*Gold Medallist.*)

1891. Sclater, William Lutley, M.A., F.Z.S.; 10 Sloane Court, Chelsea, S.W.

1907. Scott, The Rev. Canon Samuel Gilbert, M.A.; The Rectory, Havant, Hants.

355 1899. Selous, Frederick Courteney, F.Z.S.; Heatherside, Worplesdon, Surrey.

1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

1908. Seppings, Capt. John William Hamilton (Army Pay Department); Yorkshire Club, York.

1899. Serle, The Rev. William, M.A., B.D.; The Manse, Duddingston, Edinburgh.

1901. Seth-Smith, David, F.Z.S.; 34 Elsworthy Road, South Hampstead, N.W.

360 1904. Seth-Smith, Leslie Moffat, B.A.; Alleyne, Caterham Valley, Surrey.

1909. Seton, Malcolm Cotter Cariston; 13 Clarendon Road, Holland Park, W.; and Union Club, Trafalgar Square, S.W.

1899. Sharman, Frederic, F.Z.S.; 47 Goldington Road, Bedford.

1870. Shelley, Capt. George Ernest, F.Z.S. (late Grenadier Guards); 39 Egerton Gardens, South Kensington, S.W.

1865. Shepherd, The Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

365 1908. Smalley, Frederic William; Challan Hall, Silverdale, near Carnforth, Lancs.

1906. Snouckaert van Schauburg, Baron René Charles; Neerlangbroek, Holland.

1903. Sparrow, Major Richard, F.Z.S.; (7th Dragoon Guards) Trimulgerry, Secunderabad, India.

1906. Stanford, Surgeon Charles Edward Cortis, B.Sc., M.B., R.N.; Royal Marine Barracks, Plymouth.

Date of Election.

1910. Stanford, Edward Fraser; 9 Cumberland House, Kensington Court, W.

370 1893. Stanley, Samuel S.; Fair View House, Harbury, Leamington, Warwickshire.

1900. Stares, John William Chester; Portchester, Hants.

1902. Stenhouse, John Hutton, M.B., R.N.; Royal Hospital School, Greenwich, S.E.

1910. Stevens, Herbert; Dejoo, North Lakhimpur P.O., Assam, India; and c/o Messrs. Thos. Cook & Sons, Ltd., Ludgate Circus, E.C.

1906. Steward, Edward Simmons, F.R.C.S.; 10 Prince's Square, Harrogate, Yorks.

375 1898. Stirling, William, J.P., D.L.; Ord House, Muir of Ord, N.B.

1893. Stonham, Charles, C.M.G., F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

1887. Styan, Frederick William, F.Z.S.; Stone Street, near Sevenoaks.

1887. Swinburne, John; Haenertsburg, Transvaal, S. Africa.

380 1882. Swinhoe, Col. Charles, M.A., F.L.S., F.Z.S.; 6 Gunterstone Road, W. Kensington, W.

1884. Tait, William Chaster, C M.Z.S.; Entre Quintas 155, Oporto, Portugal.

1905. Taylor, Lionel Edward, F.Z.S.; Division of Forestry, Agricultural Department, Pretoria, Transvaal; and Deanscourt, St. Andrews, N.B.

1909. Tenison, Lieut. William Percival Cosnahan (62nd Battery, R.F.A.); Nowsherà, N.W.F.P., India.

1889. Tennant, Sir Edward Priaulx, Bt., M.A, M.P., F.Z.S.; 34 Queen Anne's Gate, S.W.; and The Glen, Innerleithen, N.B.

385 1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton.

1904. Thompson, William R. (Lieut. R.G.A.); 'Ravello,' Carlton Road, Weymouth, Dorset.

1900. Thorburn, Archibald, F.Z.S.; High Leybourne, Hascombe, near Godalming, Surrey.

1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle.

Date of Election.

1903. Ticehurst, Claud Buchanan, M.D.; Huntbourne, St. Michael's, Ashford, Kent.

390 1894. Ticehurst, Norman Frederic, M.A., M.B., F.R.C.S., F.Z.S.; 35 Pevensey Road, St. Leonards-on-Sea.

1902. Townsend, Reginald Gilliat, M.A.; Buckholt, Dean, Salisbury.

1893. Trevor-Battye, Aubyn, F.Z.S.; Royal Societies Club, St. James's Street, S.W.

1906. Tuke, Charles Molesworth; The Gate House, Chiswick, W.

1864. Upcher, Henry Morris, F.Z.S.; Sheringham Hall, Norfolk.

395 1894. Ussher, Richard John, M.R.I.A.; Cappagh House, Cappagh, S.O., Co. Waterford, Ireland.

1907. Van Oort, Dr. Eduard Daniel; Museum of Natural History, Leyden, Holland.

1910. Van Someren, Dr. Robert Abraham Logan; Uganda Medical Staff, Kyetumi, Uganda.

1908. Vaughan, Matthew; Haileybury College, Herts.

1906. Vaughan, Lieut. Robert E., R.N.; H.M. Coast Guard, Tenby, S. Wales.

400 1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth.

1881. Verner, Col. William Willoughby Cole (late Rifle Brigade); Hartford Bridge, Winchfield, Hants; and United Service Club, S.W.

1902. Wade, Edward Walter; Middelburg, North Ferriby, East Yorks.

1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Christchurch Road, Reading. 405

1881. Walsingham, Thomas, Lord, M.A., LL.D., F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

1899. Walton, Major Herbert James, M.D., F.R.C.S., C.M.Z.S., I.M.S.; c/o Messrs. King, King & Co., P.O. Box 110, Bombay, India.

1872. Wardlaw-Ramsay, Lt.-Col. Robert George, F.Z.S.; Whitehill, Rosewell, Midlothian, N.B.

1896. Watkins, Watkin, F.Z.S.; 33 Evelyn Gardens, S.W.; and Wellington Club, S.W.

410 1903. Watt, Hugh Boyd; 3 Willow Mansions, West Hampstead, N.W.

Date of Election.

1900. Westell, William Percival, F.L.S., F.R.H.S.; Chester House, Letchworth Garden City, Herts.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham.

1891. Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

1909. White, Henry Luke; Belltrees, Scone, New South Wales.

415 1903. White, Stephen Joseph, F.Z.S.; Oakwood, Crayford, Kent.

1903. Whitehead, Charles Hugh Tempest; Deighton Grove, York; and 56th Rifles (Frontier Force), Sehore, Bhopal, India.

1887. Whitehead, Jeffery, ; Mayes, East Grinstead, Sussex.

1897. Whymper, Charles, F.Z.S.; 11 Orange Street, Haymarket, S.W.

1898. Wigglesworth, Joseph, M.D., F.R.C.P.; Rainhill, nr. Liverpool.

420 1894. Wilkinson, Johnson; St. George's Square, Huddersfield, Yorkshire.

1896. Williams, Capt. Lionel Arthur, F.Z.S.; Junior United Service Club, Charles Street, St. James's, S.W.

1897. Wilson, Allan Read, B.A., M.B., B.Ch.; Bloxham, Oxon.

1888. Wilson, Charles Joseph, F.Z.S.; 34 York Terrace, Regent's Park, N.W.

1900. Wilson, Dr. Edward Adrian, F.Z.S.; SS. "Terra Nova," Christchurch, Lyttleton, New Zealand, and Westal, Cheltenham.

425 1887. Wilson, Scott Barchard, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

1897. Witherby, Harry Forbes, F.Z.S.; 11 Hereford Mansions, Hereford Road, Bayswater, W.

1908. Witherington, Gwynne; Aberlash, Sonning, Berks.

1899. Wollaston, Alexander Frederick Richmond, B.A.; 31 Argyll Mansions, King's Road, Chelsea, S.W.

1909. Woosnam, Richard Bowen; Pendell Court Farm, Bletchingley, Surrey.

430 1902. Workman, William Hughes; Lismore, Windsor, Belfast.

1891. Wright, Thomas, M.D.; Castle Place, Nottingham.

1904. Wright, William Crawford; Roslyn, Marlborough Park, N., Belfast.

1895. Yerbury, Lt.-Col. John William (late R.A.), F.Z.S.; 8 Duke Street, St. James's, S.W.; and Army and Navy Club, S.W.

1889. Young, Capt. James B., R.N.; Tytherley, Wimborne, Dorset.

435 1897. Young, John Joseph Baldwin, M.A.; Richmond Park, near Sheffield.

Date of
Election.

Extra-Ordinary Members.

1899. Godwin-Austen, Lt.-Col. Henry Haversham, F.R.S., F.Z.S.; Nore, Hascombe, Godalming.
1909. Tegetmeier, William Bernhard; 19 Westbere Road, W. Hampstead, N.W.
1860. Wallace, Alfred Russel, O.M., D.C.L., LL.D., F.R.S., F.Z.S.; Broadstone, Wimborne, Dorset.

Honorary Members.

1907. Allen, Joel Asaph, Ph.D., F.M.Z.S.; American Museum of Natural History, Central Park, New York, U.S.A.
1886. Ayres, Thomas; Potchefstroom, Transvaal, South Africa.
1890. Berlepsch, Graf Hans von, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.
1900. Collett, Prof. Robert, F.M.Z.S.; University Museum, Christiania.
5 1872. Finsch, Prof. Dr. Otto, C.M.Z.S.; Altewiekring 19$^{\text{B}}$, Brunswick, Germany.
1898. Goeldi, Prof. Dr. Emil A., C.M.Z.S.; Zieglerstrasse 36, Berne, Switzerland.
1893. Reichenow, Dr. Anton, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin.
1903. Ridgway, Robert, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.
1890. Salvadori, Count Tommaso, M.D., F.M.Z.S.; Royal Zoological Museum, Turin.

Honorary Lady Members.

1910. Bate, Miss Dorothy M. A.; Bassendean House, Gordon, Berwickshire.
1910. Bedford, Mary, Duchess of, F.Z.S.; Woburn Abbey, Beds.
1910. Lemon, Mrs. Margaretta Louisa, F.Z.S.; Hillcrest, Redhill, Surrey.
1910. Turner, Miss Emma Louisa, F.Z.S.: Upper Birchetts, Langton Green, Tunbridge Wells.

Colonial Members.

1904. Campbell, Archibald James; Custom House, Melbourne, Australia.
1908. Farquhar, John Henry Joseph, B.Sc., N.D.A.; Assistant Conservator of Forests, Calabar, Southern Nigeria.

Date of
Election.

1910. Fleming, James H.; 267 Rusholme Road, Toronto, Canada.

1909. Haagner, Alwin Karl, F.Z.S.; Transvaal Museum, Pretoria. S. Africa.

5 1908. Hall, Robert, F.L.S., C.M.Z.S.; Curator of the Tasmanian Museum, Hobart, Tasmania.

1903. Legge, Col. W. Vincent, F.Z.S.; Cullenswood House, St. Mary's, Tasmania.

1905. Macoun, John, M.A., F.R.S.C.; Naturalist to the Geological Survey of Canada, Ottawa, Canada.

1905. Millar, Alfred Duchesne; 298 Smith Street, Durban, Natal.

1903. North, Alfred J., C.M.Z.S.; Australian Museum, Sydney, New South Wales.

10 1907. Swynnerton, Charles Francis Massy, F.L.S.; Gungunyana, Melsetter, South Rhodesia.

Foreign Members.

1909. Alphéraky, Sergius N.; Imperial Academy of Science, St. Petersburg, Russia.

1900. Bianchi, Dr. Valentine; Imperial Zoological Museum, St. Petersburg.

1904. Blasius, Geh. Hofr. Prof. Dr. Wilhelm, C.M.Z.S.; Gauss-Strasse, 17, Brunswick, Germany.

1880. Bureau, Louis, M.D.; École de Médecine, Nantes, France.

5 1906. Büttikofer, Dr. Johannes, C.M.Z.S.; Director of the Zoological Garden, Rotterdam, Holland.

1906. Buturlin, Sergius A.; Wesenberg, Esthonia, Russia.

1902. Chapman, Frank Michler; American Museum of Natural History, Central Park, New York, U.S.A.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova, 6, Genoa, Italy.

1902. Ihering, Dr. Herman von, C.M.Z.S.; Museu Paulista, São Paulo, Brazil.

10 1886. Madarász, Dr. Julius von; National Museum, Budapest.

1903. Martorelli, Prof. Dr. Giacinto; Museo Civico di Storia Naturale, Milan, Italy.

1894. Menzbier, Prof. Dr. Michael, C.M.Z.S.; Imperial Society of Naturalists, Moscow.

1881. Meyer, Dr. Adolf Bernhard, C.M.Z S.; Hohenzollernstrasse 17, Berlin, W. 10.

Date of Election.

1905. Oberholser, Harry Church; Biological Survey, Department of Agriculture, Washington, D.C., U.S.A.

15 1900. Reiser, Dr. Othmar; Landes Museum, Sarajevo, Bosnia, Austro-Hungary.

1908. Richmond, Charles Wallace; United States National Museum, Washington, D.C., U.S.A.

1894. Schalow, Herman; Traunsteinerstrasse, 2^{I}, Berlin, W. 30.

1900. Stejneger, Leonhard, C.M.Z.S.; Smithsonian Institution Washington, D.C., U.S.A.

1902. Sushkin, Dr. Peter, C.M.Z.S.; Imperial University, Moscow, Russia.

20 1896. Winge, Herluf, C.M.Z.S.; University Zoological Museum, Copenhagen.

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No. XIII. JANUARY 1910.

I.—*On the Ornithology of Cyprus.*—Part II.*

By John A. Bucknill, M.A., F.Z.S., M.B.O.U.

377 †. Muscicapa grisola Linn.

The Spotted Flycatcher was first identified in Cyprus by Sibthorp. Lord Lilford found it tolerably abundant in April and May, and Guillemard obtained specimens as late as the 25th of the latter month. Miss Bate observed it frequently on the southern range in summer, as well as in the plains in spring; and Glaszner sent Madarász a number of specimens taken in May, August, September, and October.

From the 11th of April until the 19th of May, 1909, Mr. Baxendale, Horsbrugh, and I found it fairly numerous in various localities, and obtained several examples; but we did not find its nest. The bird is no doubt mainly a spring and autumn visitor, but some remain and breed in the mountains.

378. Muscicapa atricapilla Linn.

Sibthorp obtained the Pied Flycatcher on the Troödos Mountains on April the 23rd, 1787. Lord Lilford thought it not very abundant, but noticed it in the south of the Karpas in April. Guillemard met with it near Famagusta late in

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* Continued from 'The Ibis,' 1909, p. 613.

† The numbers in front of the names are those of Dresser's 'Manual of Palæarctic Birds.'

May, but Glaszner does not appear to have sent any specimens to Madarász. However, it is by no means a rare spring and autumn migrant, and Mr. Baxendale, Horsbrugh, and I found it not at all uncommon from April the 3rd to the end of that month near Nicosia and Papho, and obtained several specimens. In my garden at the former town during this period one or two were nearly always to be seen in company with *M. grisola*. I have no evidence, as yet, of its remaining to nest in the island, though it is not at all improbable that a few pairs do so.

388. Hirundo rustica Linn.

The Swallow is a very abundant summer visitor, arriving towards the end of February and leaving about the middle of October. A few always seem to appear about the 21st of the former month, and Guillemard noticed one as early as the 13th: by the end of the first week in March the main body has arrived, and in the middle of that month they commence to build—often using their old nests. In the plains they breed, as is the case with other species in the island, somewhat earlier than in the mountains.

In Nicosia I found fresh full clutches on April the 4th; on May the 8th the young were well fledged, and they flew on the 23rd; but in the hills Horsbrugh took fresh eggs as late as May the 12th, and on July the 8th the young birds on the top of Troödos were still unable to fly.

At the end of September, when it begins to get damp and cold on the hills, those which have frequented the mountains leave them and descend to the plains, from which, though a few linger till towards the end of October, they all finally disappear about a fortnight later.

391. Subsp. Hirundo savignii Steph.

The Egyptian Chimney-Swallow, which has been accorded by some a subspecific status under the above name, may be, for practical purposes, classed with *H. rustica*, and I do not think I can do better than quote Guillemard's remarks in connection with the relations which exist in Cyprus between the two forms. He writes, "The difference in the colouring of the under surface of these birds (Swallows) is extraordinary. It is quite common in Cyprus to see it ranging from nearly white to a deep reddish buff, from *Hirundo rustica* to *H. savignii* in other words. Although one may often see these extremes in a paired couple, the differences in colouring do not appear to be sexual. In Cyprus, at any rate, it is impossible to allow that *H. savignii* is a good species." To this I can add nothing. I know of no difference between the two forms in habits or distribution in the Island.

393. Hirundo rufula Temm.

The Red-rumped Swallow is a summer visitor in some abundance, but is capricious in its local nesting-haunts. Lord Lilford met with it only in the Karpas and at Famagusta. Müller refers to nine adults and one juvenile specimen, and mentions several clutches of eggs taken between April the 23rd and May the 27th. Guillemard found it nesting on the Famagusta battlements in April, at the ruins of Bellapais in May, at Kyrenia, Larnaca tes Lapethou, and near Poli in the Papho district, and saw a single specimen as early as March 6th. Glaszner sent a few to Madarász, collected on Troödos in May and June. Horsbrugh found a good many in the Troödos Range in the same months, and observed the bird in several places in May on low grounds in the Papho district. He discovered a number of nests near the camp on the Troödos heights—one with nearly fully fledged young on the 2nd of June. I have no exact details of its migratory movements, but expect that it arrives in early April and leaves at the end of September.

396. Chelidon urbica (Linn.).

The House-Martin is a summer visitor in considerable numbers, but of local distribution, particularly in its choice of breeding-sites. It was included by Sibthorp in his list. Lord Lilford saw few, but Guillemard found it nesting in very large numbers at the Kykko Monastery, on the Troödos Range, at the end of May. Glaszner does not seem to have sent any specimens to Madarász. In July, August, and

September 1908 I found this species, at times, common on Troödos, but saw none after the end of the last-named month.

It arrives early and a few, no doubt, stay in or straggle to the island in winter, Guillemard having observed a solitary specimen in December. The bulk appear, I think, in March, though Mr. Nicolls reported a flock at the sea-coast near Episcopi (Limassol district) on the 5th of February this year (1909). The first seen by Horsbrugh were on April the 8th at the Kouklia reservoir, and afterwards, in early June, he noticed a fair number on the southern range. Mr. Baxendale came across a large colony this year at the end of May nesting on some cliffs at Amargeti in the Papho district.

I have never seen it close to Nicosia.

400. COTILE RIPARIA (Linn.).

Lord Lilford states that the Sand-Martin, which was observed in April and May, but regarded by him as not common in any part of the island which he visited, was included in Unger and Kotschy's list: but this is a mistake.

Müller mentions an adult male taken in spring; Guillemard, who did not obtain specimens, also, according to Lord Lilford, noticed this species, but, apparently, makes no mention of it in his 'Ibis' articles. Glaszner does not appear to have sent Madarász any specimens. Horsbrugh observed a considerable number during his visit—the first being seen at Acheriton reservoir on March the 23rd; four days later it occurred there in some numbers, and on April the 7th, 8th, and 9th in abundance; Mr. Baxendale first noticed it at Papho on March the 29th; and the latest note of its presence of which I have any record is on May the 25th near the same place. The Sand-Martin may perhaps nest in some suitable localities, but I do not know of any definite record of its having done so. In any case it is not a very abundant visitor on the spring and autumn migrations.

402. COTILE RUPESTRIS Scop.

The Crag-Martin was first recorded by Lord Lilford, who saw it once only, in small numbers in the Karpas district. Guillemard found it nesting at the end of March near the ruins of Kantara Castle on the northern range, and also under the eaves of the High Commissioner's house on Troödos in the middle of April; he obtained specimens. Glaszner sent some to Madarász taken on Troödos in June and September.

The Crag-Martin is, I think, not a resident, though there is some local difference of opinion on this point. In the first half of February 1909 I saw considerable numbers on the sea coast, near Papho, which, I thought, had just arrived; I next observed a few at Buffarento on the Kyrenia Mountains in mid-March; Mr. Nicolls found the bird nesting on Troödos in early May; Horsbrugh saw a fair number and obtained several in the southern range from mid-May till early June, and discovered on Troödos several nests with young or without eggs and obtained one addled egg during that period. In early July of 1908 I found nests on Troödos with well advanced fledglings, all of which had flown by the 12th of August; while the last date on which I observed the birds there that year was September the 30th.

Personally I think that this Martin is only a summer visitor to Cyprus and very local in its distribution, arriving normally about the third week in March and leaving when cold weather drives it back to North Africa again, about the beginning of October. So far as I am aware its only breeding places are amongst the heights of both the mountain ranges.

404. CARDUELIS ELEGANS Steph.

The Goldfinch is a very abundant and common resident all over the island. It was included by Sibthorp in his list. It is a familiar cage-bird in the bazaars.

Horsbrugh and I found highly incubated eggs in the plains as early as March the 23rd, and fully fledged young at the end of April, but it breeds right away from the former date until May, and Horsbrugh saw young still in the nest as late as the 16th of that month.

Cyprus Goldfinches vary somewhat in size and brightness of colour, some specimens being very brilliant.

407. Chrysomitris spinus (Linn.).

The only note which I have as to the occurrence of the Siskin in Cyprus is that I saw, in July 1908, on Troödos two caged male birds said by their owner to have been taken in the preceding spring near Limassol. The fact that they were in the same hands as the female Greenfinch referred to below did not, however, strengthen my belief in the alleged locality of their capture. But, I observe, that there was in 1907 a great invasion of the Siskin into Egypt. This species would, of course, only be a winter visitor to the island.

412. Serinus hortulanus Koch.

The Serin Finch is a fairly abundant bird in Cyprus and seems to have been first definitely noticed by Lord Lilford, who found it not uncommon in the south of the island. Müller mentions a clutch of eggs which he thought were those of this species. Guillemard, who did not regard it on the whole as common, met with it in January, March and April, and Glaszner sent a few to Madarász taken in May and June. Horsbrugh and I found plenty in March near Nicosia, and the former noticed it at the end of May and beginning of June in some abundance on Troödos, where it was evidently breeding, for he obtained there a very juvenile specimen. It is without doubt a partial resident, but at the spring and autumn migrations its numbers are, I think, considerably augmented.

416. Ligurinus chloris (Linn.).

The Greenfinch was included by Lord Lilford in his list on the authority of Guillemard, but no data of its occurrence are given and it is not mentioned in the latter's 'Ibis' articles. Lord Lilford evidently included the species with considerable hesitation, and it has not, so far as I know, been hitherto observed by anyone else.

I saw a caged female on Troödos in the summer of 1908, which I was informed had been taken near Limassol in the early part of that year. It seemed to me to be of normal appearance and not to exhibit any particularly bright coloration such as is usual, presumably, in specimens from the Levant.

The Greenfinch would only be found in the Island in winter.

421. COCCOTHRAUSTES VULGARIS Pall.

Guillemard, in April 1888, saw a caged specimen at Papho, said to have been caught on the slopes of Troödos. Glaszner sent two male birds to Madarász, taken near Larnaca on January 4th and February 12th, 1903. A single bird was observed at Nicosia in December 1905 by Mr. G. F. Wilson.

This is apparently an uncommon winter visitor.

424. PASSER DOMESTICUS (Linn.).

The House Sparrow is a common resident near inhabited places, though I do not think that it is nearly so abundant as one finds it generally in England. I have no note of having seen it on Troödos, though this may, possibly, be due to my own remissness.

It nests in April and May and even in later months of the summer, and in autumn packs in small flocks and raids the threshing floors. It is now unprotected at any season by a law passed this year (1909).

It was included by Sibthorp in his list.

426. PASSER HISPANIOLENSIS (Temm.).

The Spanish Sparrow appears to have been first taken in Cyprus by Pearse, who sent a few specimens to Lord Lilford. Guillemard obtained a male at Machaira Monastery on March 12th, 1888, but makes no mention of the species in his 'Ibis' articles. Glaszner sent a female to Madarász taken near Larnaca in November 1901, and kindly lent for my inspection a remarkable female specimen of a *Passer*, which he designates as an albino of this, but which, in my opinion, may well be of the common species. Sparrows are always the last birds to which any attention is paid, and I regret to say that with regard to the presence of this species in Cyprus I can at present only express my own ignorance.

432. Petronia stulta (Gmel.).

As *Fringilla petronia* Linn., the Rock Sparrow is included by Sibthorp is his list, but apparently he does not mention it in his journal It duly re-appears in Unger and Kotschy's list and in those of the later writers, without any additional remarks. No one has hitherto been able to confirm Sibthorp's record.

450. Fringilla cœlebs Linn.

The Chaffinch is a common resident and it is rather remarkable that, apparently, it was not recorded prior to Guillemard's visit. Even he has little to say about it; he met with a single specimen in February near Nicosia, and found it in June on Troödos; he, however, brought back three specimens, two obtained on Troödos in April and May, and one near Limassol in March. Glaszner sent a good series to Madarász, obtained in January, February, May, June, September, and December in various localities, and the bird is casually mentioned by Miss Bate.

Guillemard thought that the Chaffinch retreats to the hills in the summer. Its movements in the island are in my opinion rather similar to those of some other local species, and are sufficiently interesting to be referred to in some detail. The extreme heat and the sunburnt arid character of the plains during the summer months, coupled with the scarcity of water, render the hills, with plenty of foliage, a cooler climate and the perpetual streams a far more preferable home for most birds which spend the hot part of the year in the Island. The Chaffinch well exemplifies this fact.

In the winter months it is abundant in the plains, and I have no doubt that its numbers are then largely increased by visitors from the north. In February or the beginning of March it breaks into song, and towards the end of April those individuals which have not migrated north retire to nest in the cooler parts of the mountains. From May to the middle of October it is very common on Troödos; it nests there in May and June, Horsbrugh having found young on the 1st of May, while Mr. Nicolls sent me a clutch of fresh eggs, which he had taken on the 2nd of that month (1909). At the end of October it descends by gradual stages to the plains again, the first examples appearing in 1909 at Nicosia on October the 30th, and Mr. Baxendale finding it on the long slopes of the Papho forest foothills about the same time and at Papho town on November the 5th. From that date onwards it is again abundant in the plains till the following spring.

458. Linota cannabina (Linn.).

The Linnet, which was probably identified by Sibthorp as *Linota linaria*, appears to be largely resident. It may often be observed in winter, and nests in summer amongst the hills. Lord Lilford found it common during his visit and Guillemard, who called it "generally distributed," noticed it in great numbers—still packed in flocks—at the end of March; he also met with it near Limni (Papho district) and on Troödos in June. Glaszner sent Madarász a few specimens taken in February and March. Horsbrugh and I obtained others from the beginning of March onwards and he found it fairly common on the Troödos hills, taking several clutches of fresh or slightly incubated eggs in the first half of May.

Guillemard, who remarked on the brilliance of its plumage, describes the form he met with as *Fringilla bella* Cabanis, the type of variation exhibited by Asiatic specimens; Madarász states that the examples he has seen correspond with the European form and are synonymous with *L. fringillirostris* (Bp.). Lord Lilford did not consider that Guillemard's specimens exhibited any very remarkable feature except, in one case, bright coloration. Personally I can only say that the Linnets which I have handled in the island were of a good size and shewed much rose-colour. From my own observation I should add that the numbers of the Linnet in the island appear to be augumented by migrants in spring and autumn.

461. [Linota linaria (Linn.).]

Sibthorp included in his list a bird under this designation, but makes no mention of it in his diary. As *Fringilla linaria* Linn., it is duly chronicled by Unger and Kotschy, and without remark by Müller, who inserts it only on Unger and Kotschy's authority. Sibthorp's name is itself, however, not very clear, as it might refer to the Mealy or Lesser Redpoll. It is not, in any case, likely that either bird would occur in Cyprus, and I am inclined to assume that the Linnet —*Linaria linota* (Gmel.)—was the species really intended by Sibthorp. I bracket the name of this bird as I do not think that it has, at present, any claim to be recorded among the Cypriote avifauna.

495. Loxia curvirostra Linn.
Loxia guillemardi Madarász.

The Crossbill was probably discovered in Cyprus by Sibthorp, who states in his journal (19th of April, 1787) that on the northern range near the Convent of Antiphoniti, he shot two species of *Loxia* . . . one which he proposed to call *L. varia* and the other *L. cinerea.* Perhaps his two supposed species were the male and female Crossbill, and if so, the record is peculiarly interesting as, at the present time, the Crossbill is confined to the southern range. Sibthorp did not include these two species in his formal list, and accordingly they do not appear in that of Unger and Kotschy. No more is heard of a Crossbill until Guillemard's arrival, and although on his first visit he was informed that such a bird existed it was not until his second visit that he discovered—or rediscovered—the species on the highest parts of Troödos in April 1888, when he obtained a good series of old and young and found it in some abundance. He remarked on the very dark colour of their plumage, and Lord Lilford called attention to the stoutness of their bills. It was reserved for Madarász, from examples sent to him by Glaszner, to separate the Cypriote form as distinct.

In Cyprus the Crossbill is confined to the highest coniferous forest-areas of the Troödos Range, and personally I have never seen it elsewhere than in the more or less immediate neighbourhood of the summer station on the saddle of the topmost divide. It is fairly common, but shifts about in small or sometimes biggish flocks and, unless one knows its note, may easily escape observation. I used to see it almost daily from the beginning of July to the beginning of October 1908, *i. e.* during the whole time I was in the hills, and occasionally shot a specimen. Horsbrugh found it fairly common in early June and obtained a nice series of old and young close to the Olympus Hotel not far from the summit; he found that they fed on small chrysalides and the seeds of the coniferous trees. They must, as a rule, breed very early, probably in March, at a time when their haunts are almost impassable to anyone on account of the snow, though it is worthy of remark that a *very* juvenile specimen in nesting plumage which had been shot on September the 17th was sent to Madarász. It is perhaps as well that by a statute passed in Cyprus this year (1909) this bird and its eggs will be protected—except under special permit from the High Commissioner granted for scientific purposes—in future at all seasons of the year. "Crossbill and bacon," a favourite breakfast dish, I regret to say, with one Philistine met with by Horsbrugh will, I trust, soon be, so far as the former portion is concerned, legally an unobtainable delicacy.

The bill of the old Crossbills, particularly of the males, is extraordinarily powerful and overlapping; in the juvenile specimens taken in early June it had not, in some cases, commenced to cross. Madarász regards the Cyprian bird as very closely allied to the North European subspecies *Loxia pityopsittacus*.

500. EMBERIZA MILIARIA Linn.

The Corn-Bunting is a resident, though I have no doubt that its numbers are augmented largely by summer visitors. It was noticed by Sibthorp, and Lord Lilford found it "tediously common" in April and May; Müller mentions several clutches of eggs taken from May the 6th to June the 4th. Guillemard found it generally distributed but confined to the lower altitudes; Glaszner sent to Madarász a good many specimens taken in the Larnaca district in January, March, April, November, and December.

In Cyprus the Corn-Bunting commences to sing at the end of February, and from that time until the early autumn is very conspicuous. We took eggs in May and specimens from February to June. It keeps to the cultivated lands and we did not notice it in the forest heights.

503. Emberiza melanocephala Scop.

There is little doubt that Sibthorp refers to the Black-headed Bunting when he mentions having been greatly struck by a beautiful *Fringilla*, "perhaps," he says, "the *F. flaveola* of Linnæus." He gives the Greek name "*οκάρθαλις*" by which the bird is still well-known in Cyprus. Sibthorp met with it at the end of April. As "*F. flaveola* Linn.?" it, of course, appears in Unger and Kotschy's list, but they add also *Emberiza melanocephala*, a name which was not used by Sibthorp. Lord Lilford found it in great abundance near Trikomo and on the south coast of the Karpas and drew attention to the preponderance in number of the males. Müller mentions many specimens and two clutches of eggs taken in May. Guillemard found a few on Troödos, but considered its true home to be on the northern coast, and he also observed that the males were much in numerical superiority. Glaszner sent many to Madarász taken on the southern range in May and June, a melanistic specimen being amongst them. Mr. Baxendale noted its arrival at Papho on the 22nd of April: Horsbrugh found it in plenty and took several nests in various localities in the following month (1909).

It is a common summer visitor, arriving at the end of April or beginning of May and breeding freely in the hills very shortly after its arrival. It leaves early, and I do not recollect any being seen later than the end of August. Its nest is not hard to find and we took clutches of six eggs; but five seem to be the usual complement.

515. Emberiza hortulana Linn.

The Ortolan has long been popularly supposed to be common in Cyprus and one of, if not the ordinary, species which are caught in large numbers and sold as "beccaficoes."

This is quite a mistake, though it is not difficult to trace how the error arose. Perhaps the most common reference by writers about Cyprus from the 16th century onwards is to the "Vine-birds" and their delectable qualities on the table, and they are described in many different ways. Locke (1553) says "they are much like unto a Wagtaile in fethers and making." Cotovicus (1598) writes "they are not unlike the Ortolans of Italy." Mariti (1760–7), who was not a naturalist but a very careful observer, and probably recognised that the birds caught were not always identical, speaks of "the beccafico *and* the Ortolan . . . . sold indiscriminately." Sibthorp, who was not in the Island at the time of their capture, but wrote from hearsay and no doubt with knowledge of the trade in real Ortolans in the south of Europe, declares that "immense flights of Ortolans appear about the time of the vintage; these are taken in great quantities, preserved in vinegar and exported as an object of commerce." The bird was included in Sibthorp's list and duly appeared in those of Unger and Kotschy and of Müller. Lord Lilford was assured that the Garden Warbler was the species taken but could find out nothing about the matter during his stay, whilst neither he nor his collectors ever met with the Ortolan. Lord Lilford was, rightly, disposed to think that the Blackcap was "the principal victim."

Glaszner seems to have been the first to clear up this confusion, and in writing to Madarász he corrects an account contained in a German work on Birds (Naturgeschichte der deutschen Vögel, C. G. Friderlich) concerning the alleged traffic in Ortolans in Cyprus, by pointing out that the Blackcap is the chief species taken.

The only authentic record of the Ortolan in Cyprus of which I am aware is that of a single specimen captured by Glaszner at Larnaca on April 13th, 1909, and sent to Madarász. [*Vide* also *Sylvia atricapilla,* Ibis, 1909, p. 596.]

517. EMBERIZA CÆSIA Cretzschm.

Cretzschmar's Bunting is a very common summer visitor, arriving in March and leaving towards the beginning of

October. Lord Lilford found it exceedingly abundant; Müller mentions ten specimens and nine clutches of eggs taken between April the 21st and June the 4th; Guillemard calls it "ubiquitous"; Glaszner sent Madarász a series taken in March, April, September and October. Mr. Baxendale noted its arrival at Papho in the third week in March (1909), and Horsbrugh and I found it in plenty and obtained specimens in various localities from the 21st of that month until our departure from the island in June. Mr. Baxendale came across it nesting at the end of May (1909) near Papho on the foothills of the Troödos mountains, a usual locality in which to find it.

533. Emberiza schœniclus Linn.

Guillemard shot a female Reed Bunting on the 13th of February, 1888, near Famagusta. This is the only record of which I am aware. It would be only a winter visitor.

535. Subsp. Emberiza pyrrhuloides Pall.

The form of *Emberiza schœniclus* known as the Large-billed Reed-Bunting owes its inclusion in the Cyprus list to Müller, who records, amongst the specimens sent to Schlüter, a juvenile male, taken on November the 13th. As Madarász points out, this bird, assuming the record to be substantially correct, is more likely to have belonged to the form *E. schœniclus palustris* found in Spain, Italy, and elsewhere, than to the subspecies named above.

549. Melanocorypha calandra (Linn.).

The Calandra Lark was observed by Sibthorp, who thought that it was probably a resident. Lord Lilford found it very common in the open country, and states that it breeds and is no doubt a permanent resident in the Island. Guillemard, who noticed a few in cages for sale in February, found a nest at Lefkoniko (Karpas district) with eggs—hard-set—at the end of April. Glaszner sent a few specimens to Madarász taken in March, April, and May. From my own observation I should say that in Cyprus it is not a very common breeding species, but is in the main a winter visitor. It is extremely plentiful at that season and is sold in strings for food. It is certainly the commonest cage-bird in the bazaars, and its song, though shrill, is not unpleasant. I have seen dozens towards the end of March in full song on the plains, and have obtained the bird as late as mid-April. I think that the majority leave in April and return in or about October.

555. ALAUDA ARVENSIS Linn.

Lord Lilford recorded the Skylark as exceedingly abundant in April and May, and regarded it as very common. Guillemard obtained it in February and March 1887 and 1888, and Glaszner sent a good many to Madarász taken in various localities in February, October, and November. I have only noticed it near Nicosia in March, and then not in any numbers, but I presume that it is a winter visitor, its numbers being augmented by the birds of passage in spring and autumn.

557. ALAUDA ARBOREA Linn.

Lord Lilford met with the Woodlark more than once in April in the Karpas; Pearse obtained specimens in November; Guillemard two near Limassol on January the 3rd and one on Troödos on April the 18th, 1888. Glaszner sent five taken near Larnaca and on Troödos to Madarász in February, May, September, and December. Horsbrugh found it fairly common on Troödos in the first week of June 1909 and obtained examples. I should think that this species is partially a spring and autumn migrant and partially a winter visitor; possibly, also, some may nest in the mountains.

558. CORYDUS CRISTATUS (Linn.).

Alauda cristata Linn. B. O. U. List, p. 171.

The Crested Lark is perhaps numerically the most common bird in Cyprus, sharing this distinction with the Goldfinch. It is a resident, but of course does not frequent the mountainous parts of the Island. It appears, according to my observations, to be particularly noticeable at the periods of migration, and I am inclined to think that its numbers are swollen in winter by migrants from the north. It has been mentioned by nearly every former writer, including Sibthorp. It nests in Cyprus in April and May, and I have notes of clutches of eggs taken from the 16th of the former to the 15th of the latter month, but I have also found them highly incubated as early as May the 4th. Madarász states that the specimens sent to him from Cyprus are a little paler in colour but have a deeper rufous tinge than mid-European examples, and are not nearly so dark as the form which occurs in the Balkans.

560. CALANDRELLA BRACHYDACTYLA (Leisl.).

The Short-toed Lark appears to have been first recognised in Cyprus by Lord Lilford, who found it not very abundant and apparently local on the plains of Salamis in April 1875; he obtained specimens, but did not observe it in any other part of the island. Neither Pearse nor Guillemard seems to have come across it, nor, so far as I am aware, has Glaszner sent any specimens to Madarász. However, I found a male amongst Glaszner's skins taken on the 3rd of March, 1906, at Astromeriti, not far from Morphou, and Horsbrugh obtained two near Papho in the middle of May, one of which was a remarkably pale specimen. I have hardly enough material to generalise upon the status of this bird in the island, and I can only suppose that it is partially a summer visitor, many, however, merely passing through on the spring and autumn migrations.

567. STURNUS VULGARIS Linn.

During the last twenty years *Sturnus vulgaris* has been so subdivided that nowadays the observations of older writers may not represent what would be regarded as modern accuracy. In dealing with the Starlings I therefore follow what has been written by Madarász. Large flocks of Starlings frequent the marshes and the plains of the island during the winter months. They arrive towards the middle of October, but, as a rule, are not noticed in any considerable numbers until November, when they are frequently observed feeding along with the Rooks and Jackdaws close to the towns. They leave again for the north not later than the end of March. No doubt the composition of these flocks is mixed, and comprises examples of at any rate the succeeding three forms dealt with, but until a larger series than I have as yet been able to handle has been examined, I am only capable of giving the results of what, so far as I know, has been already ascertained. With regard to *Sturnus vulgaris*, it is not very clear whether any of the Starlings actually obtained by Pearse and Guillemard belonged to this species, but the latter writes that he shot one near Salamis, presumably in early March of 1888, although he seems to have met with flocks of Starlings, some of which turned out to belong to the next species, in several different localities. None of the Starlings sent by Glaszner to Madarász were referable to *S. vulgaris*, and the few which I have had in the flesh were, so far as I could judge, obviously either *S. purpurascens* or *S. poltaratzskyi*. Lord Lilford, however, states, from Pearse's and Guillemard's specimens, that the Common Starling is a winter visitor, and I have little doubt that he is correct.

The Starlings are eagerly pursued by the local gunners, and are considered excellent for the table.

568. STURNUS PURPURASCENS Gould.

The Purple-winged Starling composes at any rate part of the winter flights of Starlings which visit the island. Guillemard obtained a number of examples at the end of February at Kouklia Marsh which he regarded as belonging to this form, and one of which at any rate was subsequently identified by Sharpe. Glaszner sent three specimens to Madarász which had been taken near Larnaca, and I received in November 1908 four examples from the neighbourhood of Nicosia.

STURNUS PORPHYRONOTUS Sharpe.

Madarász, who recognises this form as distinct, received four specimens from Glaszner, taken near Larnaca in January, February, and March. I am not at all sure that I should be able to distinguish it from *S. purpurascens*.

569. Subsp. **Sturnus poltaratzskyi** Finsch.

Pearse obtained in October 1878 some specimens of Poltaratzsky's Starling which were identified by Seebohm, and Guillemard shot at least two on his 1888 visit. Glaszner sent Madarász nine specimens, taken near Larnaca in January, February, and November. I obtained one old male, which I should think is typical of this form, at Morphou in December 1908. I believe that Glaszner has sent a considerable number of locally obtained Starlings to various European naturalists, but I have not been able to ascertain that any results have as yet been published concerning them.

572. **Pastor roseus** (Linn.).

The locust was for centuries almost an annual scourge in Cyprus, and the wailings of writers over its destructiveness are lamentable. All sorts of remedies seem to have been tried, but the most successful, according to the 16th and 17th century writers, was a miraculous fountain of water, situated in Syria or Persia, a basin of which, being conveyed to the island, with certain solemn rites, was followed by large flocks of "red and black birds, which, flying together like Starlings, with their song and flight destroyed the locusts." There are other interesting reasons given for the appearance of these useful assistants, but it can hardly be doubted that this account, published in 1596, refers to the Rose-coloured Pastor. The extremely capricious character of the visits of this species is shown by the infrequency with which it has been recorded. It was, however, one of Unger and Kotschy's additions to Sibthorp's list; but, although Lord Lilford was informed that it was very well known in Cyprus and was assured that it sometimes bred in the island, neither he, Pearse, Guillemard, nor Glaszner apparently succeeded in coming across it. Indeed, the only definite record with which I was until lately acquainted was that of a single juvenile specimen mentioned by Müller as having been taken during the breeding-season, presumably in 1877 or 1878. Mr. Baxendale and Horsbrugh were lucky enough to meet with this species in May 1909, when they observed eight on the 20th and twelve on the 22nd of that month, near Papho, and from the latter flock Mr. Baxendale obtained a fine female. Although locusts have been practically exterminated during the British occupation of the island, precautionary measures are annually taken to prevent their re-establishment, by payments, during the early summer months, on a liberal scale, for all young locusts brought in by the peasants, who collect them in nets whilst they are in what we should call in South Africa the "voetganger" stage, and it is curious to notice that one of the flocks of the birds seen this year were haunting a locality where the destruction of these locusts was being proceeded with on a large scale. Although I showed the specimen obtained to many old Cypriote sportsmen, none of them had ever seen the bird before.

585. GARRULUS GLANDARIUS (Linn.).
Garrulus glaszneri Madarász.

Sibthorp discovered the Jay on Troodos "by its hoarse screams—hopping about the branches of the *Pinus pinea*" on April 30th, 1787. It was re-discovered by Guillemard in the same range in 1887, and the two specimens which he then obtained, together with others which he brought back on his second visit, were thought to present some slight peculiarities of plumage, and were submitted by Lord Lilford to Seebohm. Seebohm stated of them, "The Cyprian Jay is one of the local races of the Stripe-headed Jay which ranges from Britain to Japan. It is scarcely distinguishable from the East-Russian variety *G. severzowii* Bogdanow, and like that race is one of the intermediate forms between *G. brandti* Eversm. and *G. glandarius*."

Glaszner sent a good series to Madarász, who definitely separated the bird in 1902 under the name given above. Glaszner's Jay is really a fairly common resident in Cyprus, but is restricted to the forests of the southern range, and even there mainly to elevations above 3000 feet. I found it plentiful in 1907 and 1908 all the summer in the area round the hill-station on Troödos. Horsbrugh obtained numerous specimens in his spring journey through the same mountains in 1909, and on June 1st discovered a nest ready for eggs. On the 8th June, 1909, Mr. Nicolls took a fresh clutch of five eggs, which he sent to me. I do not think that the eggs have been described before; but I know Glaszner has obtained them, as he shewed me some in 1907. They are exactly similar to those of *G. glandarius*, but, as in the case of the eggs of some other Cypriote birds, are distinctly small, averaging only 1·18 × ·85 inch. In its habits the Cypriote Jay does not differ from its English congener; but it has, in my opinion, a much weaker cry. It is, I am sorry to say, much pursued by the younger Cypriote gunners, and is habitually eaten.

596. Pica rustica (Scop.).

The Magpie is a common resident, but does not frequent the very highest portions of the southern mountains. It breeds in Cyprus during April and May, and I have notes of nests with clutches of not less than five eggs from April the 15th to May the 20th.

The Magpie appears to be one of the hosts of the Great Spotted Cuckoo (*vide infrà*, p. 31). In size the Magpies' eggs found in the island vary considerably, but on average are fairly normal; the mean of twenty-three being 1·32 × ·93 inch. Sir Charles Tyser, the present Chief Justice, saw seventeen Magpies together, near Larnaca, on November the 11th, 1908.

Lord Lilford mentions that some of his specimens showed a good deal of brown on the primaries and rectrices. I have not yet observed this in the few specimens Horsbrugh and I took the trouble to obtain.

599. Corvus monedula Linn.

The Jackdaw is a very common resident, and is generally distributed. In habits it does not appear to differ from the bird found in England. It nests freely in the old houses and ruins in the towns, and on the cliffs and high rocks near the sea and in the hills. It commences repairing its nests in early March, and about mid-April I have had a good many eggs in all stages of incubation: they appear typical in colouring but are rather small, the average of a dozen being 1·34 × ·98 inch.

Whatever may be the status of the form *C. collaris* Drummond, there is no doubt that in very many Cypriote specimens the nuchal collar is extremely white; but this is by no means invariably the case, and, so far as I can judge, it is partially a sign of age; but, in any case, one can always see birds with almost every grade of colour.

602. CORVUS CORNIX Linn.

Corone pallescens Madarász.

The Grey or Hooded Crow is a very common resident, and, although I do not remember to have seen it close to the Troödos encampment (from which it is probably kept away by the multitude of Ravens), it is, elsewhere, a nuisance. Though a useful scavenger, it is very destructive to the young of poultry, game, and wild birds, and I have seen two kill a nearly full-grown tame pigeon. Horsbrugh saw a pair knock over a Magpie and rob it of a piece of meat. It is very abundant in the vicinity of the towns; it commences to nest at the end of March, and its behaviour is interesting at that period. Being compelled to build in trees, which are mostly easily accessible and close to dwelling-houses, it constructs a small well-concealed nest—usually at the top of a eucalyptus or fir—with the utmost secrecy, and though at other times an abominably noisy bird, it scarcely ever utters a note when near its breeding-place.

Lord Lilford observed that the mantles of the Cypriote Hooded Crow were somewhat lighter in colour than in typical British specimens, and Madarász, mainly on this difference, has separated the island bird under the name *C. pallescens*. From the many hundreds I have seen and perhaps twenty which I have handled, I should say, without hesitation, that the light parts of the plumage are vastly whiter than in British specimens. In addition to this, the local bird seems more compact and considerably smaller, and, in all which I have closely examined, the junction line between the white and black on the breast seems cut very sharply. We took many eggs from the 4th of April up to the 18th of May, finding them in all stages of incubation during that period; the usual complement is five, but we obtained more than one clutch of six. We noticed at once a peculiarity observed by Müller, that all the eggs are at the lowest edge of the range of size, the average of fifteen specimens being only 1·57 × 1·1 inch. Otherwise the eggs are typical, but we took four in a clutch of six which were pale blue, without any markings. I have not yet found this species, as one would perhaps expect, acting as host to the Great Spotted Cuckoo.

It should perhaps be mentioned that Guillemard writes, on his first visit, of "*Carrion* Crows," but the expression was no doubt not used, as has been erroneously thought, to refer to *Corvus corone* Linn., the *Black* or "*Carrion*" Crow, so-called in England, as this bird is not found in Cyprus.

Madarász tentatively places the Cypriote bird between *C. sharpii* Oates and *C. capellanus* Sclater.

604. Corvus corax Linn.

The Raven is a common resident, and generally distributed throughout the island. During the summer months a great many congregate near the camp on Troödos, attracted no doubt by the slaughter house and refuse, and there I have frequently counted over fifty in the air together. They are always ready to play with or mob any Eagle, large Hawk, or even Vulture which may come their way, and their agility on the wing is surprising. They nest early, and Horsbrugh and I took a slightly incubated clutch of six eggs on the 13th of March, 1909, near Nicosia; they are typical in colour but distinctly small, the average being 1·79 × 1·31 inch. The female, which I shot from the nest, was also rather small, but otherwise in no way remarkable; her crop was full of coleoptera. Lord Lilford remarks that his specimens from Cyprus varied considerably, *inter se*, in dimensions, were very stout-billed, and had all some umber-brown feathers in the wings, shewing some affinity to *C. umbrinus* Sundevall and *C. tingitanus* Irby (*C. leptonyx* Peale).

Madarász, who had a female from Glaszner, noted that the wings were somewhat shorter on the apical side than in the typical mid-European form.

One is accustomed to find the Raven breeding in Great Britain in very inaccessible places, but in Cyprus it often nests in suitable crevices in the little cliffs which form the last part of the ascent of the "Tafel-kop" hills, so common a feature of parts of the island landscape. In the plains in winter Ravens often look for food in the fields in company with Hooded Crows, Rooks, and Jackdaws.

608. CORVUS FRUGILEGUS Linn.

The Rook is a common winter visitor, although it does not seem to have been noticed in any abundance by previous writers. Pearse sent to Lord Lilford one specimen only, which was taken in November, and Guillemard in his articles mentions it only once and then states that "it did not appear to be common, as, indeed, might be expected." Madarász does not seem to have received it from Glaszner. In the neighbourhood of Nicosia the Rook arrives in mid-November and leaves about mid-March. It may be seen in hundreds in company with Jackdaws and Hooded Crows searching for food on the cultivated lands, and it roosts at night in the tall eucalyptus and other trees usually found in the immediate vicinity of the towns and villages. The Rook never, so far as I know, nests in the island, my earliest note of its arrival being November the 18th and my latest of its stay March the 20th.

610. CYPSELUS APUS (Linn.).

The Swift is an exceedingly common summer visitor. My first note of its arrival is on February 23rd, 1909, when Mr. Baxendale observed a single bird at Papho: I noticed several on March 3rd of the same year at Nicosia, but the main body does not arrive until about the second week in March. The wide-eaved houses, the ruins, and the old-world towns of the island make an ideal home for this bird. It breeds all over the island, even in the hotel near the summit of Troödos. Horsbrugh took a good many clutches slightly incubated at Kyrenia on April 24th, 1909, and it is, perhaps, worthy of notice that six out of seven nests contained three eggs each. The nests were quite bulky structures made of sea-wrack, tow, feathers, string, straw, rag, twigs, wool, and dried grass, all these materials being agglutinated together; the dimensions measuring quite nine by six inches: they were placed between the deep undercut supporting arms of a balcony and the under parts of the supported projecting surfaces.

On June 6th, 1909, Horsbrugh found young in nests on the southern range.

The Swift leaves the island at the beginning of September, or even at the end of August, and at the Troödos hill-station I have never seen it after the end of July.

611. Subsp. CYPSELUS PEKINENSIS Swinhoe.

Glaszner appears to have sent to Madarász only eight Swifts, two belonging to the following species and the remaining six all resembling *C. pekinensis*. These six were obtained at Larnaca in March, April, and May. Madarász, on these grounds, omits *C. apus* from the Cypriote list.

I can only say that the few specimens of Swifts which I have handled in Cyprus appear to me not to differ materially from *C. apus*, though it is evident from Madarász that *C. pekinensis*, or a form very similar, must frequently occur in the island.

612. CYPSELUS MURINUS Brehm.

The Pallid Swift has seldom been recorded from Cyprus, but though, as Lord Lilford suggests, it is probably local in its distribution in the island, I have no doubt that its existence would be overlooked by almost every resident. Guillemard obtained specimens at Kykko Monastery late in May 1887, where it was doubtless breeding, and Glaszner sent Madarász a pair taken at Larnaca on March 24th, 1901, and March 29th, 1902, respectively.

None of our party has been as yet able to identify the species with certainty nor have we obtained any specimens.

616. Cypselus melba (Linn.).

The Alpine or White-bellied Swift was—as was *C. apus*—recognised by Sibthorp as a summer visitor to Cyprus.

It was observed by Lord Lilford on several occasions during his visit "high in the air" near the sea: Müller mentions an adult female taken in spring: Guillemard found a few examples at Lefconiko at the end of April 1887, and recorded it as early as February 26th at Kouklia, in 1888, while at the end of March in the same year he met with it nesting in inaccessible places near the ruins of Kantara Castle.

It does not seem to have been obtained by Glaszner.

This species is a fairly common spring and autumn visitor to the island and probably nests annually in a few suitable places. My first note of its appearance is on March the 29th, 1908, when it was observed at Papho by Mr. Baxendale; from the 30th of March to the 28th of May, 1909, Mr. Baxendale and Horsbrugh met with it more or less frequently in various parts of the island and obtained a considerable number of specimens. I have never seen it at Nicosia nor did any of us find it breeding. It was particularly common near the Acheritou and Kouklia reservoirs.

I have no definite autumn records of its appearance on migration or of the leaving of those which breed, but I presume its general departure must take place about the beginning of September.

618. Caprimulgus europæus Linn.

The Nightjar is a regular and not uncommon visitor on the spring and autumn migrations, and although I am not aware that it has yet been discovered nesting in the island, I should think it quite probable that a few individuals do so. The species was recognised by Sibthorp, and Lord Lilford found it in great numbers close to the sea in the Karpas District in the last week of April 1875; these had evidently just arrived, as many declined to move until actually touched. He also met with a few elsewhere in the island, but was informed by the inhabitants that not only did the Nightjar not breed in Cyprus, but that it did not lay eggs at all, being "inspired with a fruitless passion for the Cuckoo." It does not seem to be mentioned in Guillemard's 'Ibis' papers, but apparently he obtained specimens. Glaszner sent one, taken on the 19th of August, 1901, to Madarász, which the latter describes as being remarkably pale in colour, and approaching the form *C. unwini* Hume: he was in some doubt whether to record it under this name or that of *C. meridionalis* Hart. Glaszner shewed me another female taken by him on the 14th of September 1906. Mr. Barrett, the Superintendent of the Government Farm at Athalassa, near Nicosia—to whom Horsbrugh and I are much indebted for his constant assistance—brought me a live female on the 16th of October, 1908, and informed me that there were several to be then observed on his farm. We first noticed them in 1909 on the 29th of March, when Horsbrugh saw several at Acheritou Reservoir; at Athalassa I shot a male on the 3rd of May, and Horsbrugh saw others in the Papho district, and on the Troödos foot-hills up to the 13th of that month. The last that I observed was just outside my garden in Nicosia on the 13th of May, on the evening of which I also heard its note.

Picus sp. inc.

Unger and Kotschy added to Sibthorp's list "*Picus* sp. *κραουγος*"! but no one has since met with any species of Woodpecker in the island, and it is difficult to understand to what they refer. Possibly they may have heard of the presence of a tree-climbing bird—the local Tree-creeper—which they thought was probably of this genus. *Dendrocopus syriacus* (Hempr. & Ehr.) would be perhaps more likely to occur in Cyprus than any other Woodpecker.

656. Iynx torquilla (Linn.).

Lord Lilford recognised the cry of the Wryneck more than once near Limassol in May 1875, but the only specimen which he or his collectors obtained was a female shot by Guillemard near Limassol on March 24th, 1887, although it is not mentioned at all in the latter's articles in this Journal, and on that account, no doubt, Lord Lilford expressed the opinion that the species was somewhat rare in the island. Glaszner, however, sent Madarász six examples obtained in April, August, and September. During the spring of 1909 Mr. Baxendale, Horsbrugh, and I came across the Wryneck in the plains not at all uncommonly, and obtained a number of specimens between the 18th of March and the 13th of April. I observe from my note-book that we shot eight and saw in all about twenty. The Wryneck is evidently a visitor on spring and autumn migration; I have no knowledge of its breeding in the island, but I should think it quite likely that a few may both nest and winter there.

657. Alcedo ispida Linn.

The Kingfisher is not a very common bird in Cyprus, probably because there are not many places suitable for its necessities at all seasons of the year. Although I have no definite evidence of its nest being taken in the island, I am inclined to think that it is probably a resident in a few suitable localities, but that its numbers are slightly increased by migrants in spring and autumn, some of which remain throughout the winter. It was first noticed by Lord Lilford, who, however, only saw one example in the inner harbour at Famagusta in April. Guillemard observed it in March on the sea-coast near Limassol in 1887, and obtained a specimen at Famagusta in February and another at Larnaca in April on his second visit. Glaszner sent Madarász three examples, collected near the last-mentioned place in April, September, and November.

The bird is well known to the English residents, and Mr. G. F. Wilson has seen several in August and September, both on the river near Nicosia and at Famagusta Harbour. I first saw it on the 19th of September, 1908, on a little perpetual stream near Papho, and in March and April, 1909, Horsbrugh saw a few and obtained some specimens at the Acheritou and Kouklia reservoirs. I am also informed that it has been frequently noticed on the sea-coast at Kyrenia.

658. Ceryle rudis (Linn.).

The Pied Kingfisher was included by Lord Lilford in his list upon the accurate account of its presence in the island, given to Guillemard by Mr. C. S. Cade, the present Commissioner of Nicosia, who had been well acquainted with the species on the West Coast of Africa, and who informs me that he met with it on the Kyrenia Coast when there stationed. Although neither Lord Lilford nor his collectors obtained any specimens, the correctness of Mr. Cade's statement is substantiated by the fact of the capture by Glaszner of a female at Larnaca on November 16th, 1902, which was despatched by him to Madarász. Glaszner also kindly lent me a male obtained by him on the 3rd of February, 1906, at the same place. None of us have yet met with it in the island, and I think it must be very rare and probably only a casual visitor from the neighbouring mainland.

661. HALCYON SMYRNENSIS (Linn.).

Very credible accounts were given to Lord Lilford and to Guillemard of the occurrence of the Smyrna Kingfisher in Cyprus, but the authority for these statements is not very clearly indicated, and, so far as I am aware, no specimen has as yet been obtained locally. However, Guillemard declared that he had no doubt whatever that the species occurred in Cyprus, and hence probably the island is mentioned as one of the localities in which the bird is to be found in Dresser's 'Manual of Palæarctic Birds' (p. 461). It has not been heard of or noticed by any of us.

663. CORACIAS GARRULUS Linn.

The Roller is common in Cyprus on its spring and autumn migrations, and should perhaps really be called a summer visitor, as a number always stay to breed in the island. It was first noticed by Sibthorp on April the 12th (1787). Müller refers to ten adult specimens and eight clutches of eggs taken between April 22nd and June 4th. Lord Lilford noticed it very commonly during his visit, and states that "it breeds abundantly in Cyprus in soft banks of marl and sand." Guillemard found it nesting in early June of 1887, "within a day or two of hatching a second brood," in the Papho district, and Miss Bate found "numbers" of "nests" in holes in cliffs and in the walls of houses in 1901 and 1902. Glaszner sent numerous specimens to Madarász taken in April, May, June, and September. Although Guillemard records its earliest vernal appearance on April the 3rd, 1888, I should say that that is an unusually early date.

According to our observations the Roller does not as a rule arrive until the middle of April; the migration continues for about a month, and, at any rate, by the end of May those birds which have not settled down to nest have moved north; the return migration takes place in September and early October. Our first date of arrival is April the 17th, and our last of departure October the 17th. It is most frequently noticed in mid-May and early October; and although Horsbrugh met with it on the Troödos foot-hills it is not, I think, found on the higher parts of the mountains. It is eaten by many local people.

666. Merops apiaster Linn.

The Bee-eater in its habits resembles the Roller, but instead of being merely common is extremely abundant; it arrives in large numbers during April and May; the bulk leave towards the end of May, but a certain number remain to nest. The return migration takes place in September, big flocks collecting at the end of that month, and soon disappearing. Our first date of its arrival is April the 1st, but it is not abundant until ten days later; our last note of it in autumn is October the 4th in the Famagusta district.

The bird was recognised by Sibthorp; Müller mentions handling 29 adult and 57 juvenile specimens! Lord Lilford, who found it exceedingly common, states that it nests, but was assured—erroneously it may be added—that after nesting it left the island altogether before the middle of July; Guillemard found it breeding in company with the Roller in the Papho district at the beginning of June 1887. Miss Bate pointed out the incorrect nature of Lord Lilford's information as to its departure in mid-July. Glaszner sent Madarász a number of specimens taken in June and September.

To the above there is little to be added. From mid-April till the end of September, whether I was in the plains or on Troödos, hardly a day passed without my seeing or hearing these birds—often in some numbers—although on the higher parts of the mountains they do not seem to alight. In early September their numbers visibly increased, and from the 15th to the 25th the country on the south coast from Limassol to Papho through which I was travelling on Assizes (1908) was swarming with large and small flocks. In the bazaars were cages crammed with live birds for sale—masses of vivid blue and green terror—which, poor things, had been caught with birdlime in the neighbourhood, and were destined for the pot; skeins of dead festooned the shops or were hawked about on strings by picturesque street arabs; the sky resounded with their unmistakeable notes, and the graceful flight of the companies was noticeable on every side. Our caterer insisted on serving some for dinner, but we found them sweet to the taste and not particularly palatable. They were all just on the point of their departure for Africa, and on October the 1st not one remained. Of the vast numbers then seen I am quite satisfied that not five in a hundred could have been bred in the island.

669. Upupa epops Linn.

The Hoopoe is another common spring and autumn visitor, and a number of pairs no doubt annually remain to nest in cool and suitable places on the mountains. It arrives in mid-March, Guillemard recording it as early as the 10th, our first note being on the 15th. It leaves in September, our last record being September 26th, 1908.

It was included in Sibthorp's list, and Müller mentions three examples, one of which was obtained during the breeding season. Though met with not infrequently in the spring by Lord Lilford and Guillemard, neither of them regarded it as abundant. Glaszner sent Madarász a few specimens taken in March and September.

From mid-March to mid-April 1909 Mr. Baxendale, Horsbrugh, and I found the Hoopoe in considerable numbers in the plains, but though we continued to meet an occasional specimen until the first week in May, it was from the mountains that most of our records during that month came, while Horsbrugh and Mr. Nicolls met with it there not uncommonly in June. From July the 1st, 1908, when I arrived at the hill-station, until about mid-September, I frequently noticed the Hoopoe, and in August I had the pleasure of seeing an old pair and three young birds in close proximity to our mountain cottage (5500 ft.). They were very tame, and the old birds sometimes came within a few yards of the house.

670. Cuculus canorus Linn.

The Cuckoo is a common spring and autumn visitor, and was known to Sibthorp, who frequently heard it. Lord Lilford found it exceedingly common; Guillemard records having first heard it on April the 13th, and Glaszner sent Madarász a couple collected in the latter half of that month.

According to our observations the Cuckoo arrives at the beginning of April (our earliest date being the 2nd—*Horsbrugh*). From that date till the first week in May we constantly saw and heard it, but Horsbrugh noticed it at Morphou as late as June 6th (1909), and Mr. Baxendale at Papho in mid-July. Probably, therefore, a few individuals deposit their eggs with suitable hosts in the hills, but up to the present I have never heard or seen a specimen during my two summer visits to the mountains, and records of the return migration appear to be entirely lacking; presumably it should take place at the end of August or beginning of September.

Its note in Cyprus seems rather feeble.

674. Coccystes glandarius (Linn.)

Much to Lord Lilford's surprise he did not meet with the Great Spotted Cuckoo in Cyprus, but Pearse sent him a single specimen. Müller refers to two female adults and five eggs from five clutches of eggs of the Magpie taken between April 15th and May 20th. Guillemard brought home one shot near Famagusta on March 19th, 1888, and later—in 1889—received another (without data) from Captain, now Sir, Arthur Young, then Commissioner at that place, probably taken in the autumn of the preceding year.

Miss Bate, however, found this Cuckoo not uncommon in the spring of 1902, particularly on the slopes of the northern range, and Glaszner sent seven to Madarász taken in the Larnaca neighbourhood in March, April, May, and August. Mr. Baxendale, Horsbrugh, and I met with the Great Spotted Cuckoo in 1909 from March the 9th until April the 2nd, shooting or seeing over a dozen. Mr. G. Wilson saw two near Nicosia as late as the 19th of April in the same year, and Mr. Nicolls has once seen it on the summit of Troödos. It certainly seems to be in the main confined to the wooded portions of the plains and foot-hills. Although some individuals may be true summer visitors and avail themselves of the friendly nests of the abundant Hooded Crows and Magpies, my own opinion is that the species is a rather rare visitor on spring and autumn migration, the return passage taking place at the end of August.

Amongst the numerous eggs of Hooded Crows and Magpies which I have handled I have never seen an egg which belonged to this bird. Horsbrugh found that their crops contained mainly hairy larvæ.

688. Asio otus (Linn.).

The Long-eared Owl would appear to be a rare winter visitor. Pearse sent a male to Lord Lilford, taken on November the 8th, 1878, at Levka near Morphou, and Glaszner forwarded to Madarász a female shot in November, 1902, and a male in January, 1903, the latter being remarkably pale in colour.

I know of no other records.

689. Asio accipitrinus (Pall.).

Asio brachyotus B. O. U. List, p. 86.

The Short-eared Owl is a winter visitor, though no doubt many examples are merely birds of passage. Lord Lilford met with it frequently in the plains near Famagusta and

Limassol and was assured that the species bred in the island, but the specimens he obtained (in April, 1875) shewed no symptom of doing so. It was also procured by Pearse and Guillemard. Glaszner sent Madarász specimens, taken in September, October, November and January, near Larnaca.

691. Scops giu (Scopoli).

The European Scops-Owl is not quite identical with the loca form which is so familiar to residents in Cyprus. Madarász, who has now separated the latter as *Scops cyprius*, has pointed out, as a remarkable fact, that the European form occurs, though apparently rarely, as a winter visitor to the island, Glaszner having sent him six specimens of it taken near Larnaca in March, September, and October.

692. Scops cyprius (Mad.).

The Cyprian Scops-Owl is a common resident in the island. Lord Lilford found it very abundant and, no doubt, had he written his notes in these latter days, when differentiation between closely similar forms is carried out very minutely, would have anticipated Madarász in the separation of the local bird as an insular species, in view of the fact that he, in 1889, drew particular attention to the very dark plumage of all the specimens obtained by himself and his collectors in Cyprus. He was not, however, very clear as to the status of the species in the island and from his remarks evidently regarded it as mainly a summer visitor and only partially a resident. Pearse sent him specimens obtained in November and December. Müller mentions four clutches of eggs taken between May 8th and 23rd. Guillemard found it nesting in a hole in the roof of a house in the first week in May. Glaszner sent a long series to Madarász taken in January, February, March, and October. Madarász gives a three-colour-process plate of *Scops cyprius* in his paper "Ueber die Vögel Cyperns" (1904).

According to our observations the Cyprian Scops-Owl is nct uncommon, and I have not infrequently found it in the summer well up the Troödos mountains. Mr. Baxendale has observed it at Papho; and though Lord Lilford remarks that the instance recorded by Guillemard was the only one known to him of this species nesting in a house, it is perhaps worthy of remark, that the only nest which any of us actually came across was built in a similar situation at Papho, at the end of March this year. Horsbrugh obtained several specimens in different parts of the island in March, April, and May.

706. Athene noctua (Scop.).

The Little Owl, and the sub-species next dealt with, should perhaps be really treated together, for at any rate in Cyprus the bird, which is an extremely common resident, seems to range through almost every variety of shade between and including the typical forms. As *Strix passerina* it was recorded by Sibthorp: Unger and Kotschy however included it in their list as *Athene noctua*, Retz., var. *meridionalis*.

Lord Lilford, who remarked upon the sandy coloured plumage of specimens collected by himself and Pearse, consulted Seebohm with regard to them. Seebohm identified the collection as "a good series, all more or less intermediate between *Athene noctua* and *Athene glaux*," a conclusion more or less borne out by a series sent by Glaszner to Madarász. The latter remarks that they are, although somewhat darker than specimens from Palestine, Transcaspia, and Persia, really closer to *Athene glaux* than to *A. noctua*, whilst at any rate one specimen from Glaszner's collection could be regarded as a perfectly typical specimen of the former type. To what has already been written about this bird in Cyprus I have little to add. Müller records clutches of eggs taken between the 8th of May and the 4th of June, but we found clutches of six, highly incubated, as early as the 10th of April and fully fledged young on the 23rd of May. Miss Bate states that she never observed the species in the Troödos forest, but we obtained eggs at Kambos in 1909, and Guillemard records the bird from the summit of the southern range, while I have seen it on several occasions in the summer within a few hundred yards of the camp. In short, it is very common, well distributed, very noticeable on account of its loud cries, which it utters incessantly at night and sometimes during the day, and extremely familiar, frequenting barns, farm-buildings and houses, and being often seen in the towns themselves. With regard to the coloration of the many specimens which we obtained, I can only say that they varied remarkably, some being extremely light and others quite dark. We kept two pairs for some time in captivity, and deposited one pair in the Zoological Gardens in London. Of these two pairs, those taken from the farm-buildings, attached to my house in Nicosia, were extremely dark, and I should regard them as typical *Athene noctua*; the second pair, taken from the sandy district at Athalassa by Mr. Barrett, was extremely light and were in my opinion equally typical of *Athene glaux*. In Cyprus I doubt if any real border-line exists between the two forms.

707. Subsp. Athene glaux (Savigny).

In view of what I have written with regard to the preceding species, it is unneccessary to add anything further in connexion with this form.

709. Aluco flammeus (Linn.).

Strix flammea, B. O. U. List, p. 85.

The Barn or White Owl is, without doubt, very rare in Cyprus. Lord Lilford heard it at Larnaca and Famagusta, and Guillemard, in 1887, saw at the former place two individuals, which had been taken there, but he never observed the species elsewhere and only once doubtfully heard its cry during his two visits. The only specimens of which I have any knowledge is an adult, brought alive to Mr. Baxendale on the 13th of June, 1909, which had been taken near Papho, and another shot in the same district. I am unable to say what is the status of this bird in the island, but am inclined to think that it is only a straggler.

710. Gyps fulvus (Gmel.).

The island is not large enough to offer a larder for very great numbers of Vultures, compared with the swarms of hundreds I used to see round Pretoria shortly after the Boer war. The Griffon Vulture is, however, a tolerably common resident, although I do not remember seeing more than about twenty together. It nests in suitable localities in both ranges of mountains and also on the cliffs of the Akrotiri promontory. It breeds early in the year, and eggs which Horsbrugh and I obtained on the 21st and 31st of March, 1909, in the Kyrenia range, were very much incubated. We did not find many eyries nor did we see more than half a dozen pairs in the few miles of mountain which we worked: the nests each contained only one egg and were inaccessible to us without a rope, but fortune favoured us with a native guide—one Charilaou, of a village near Buffavento—whose astonishing climbing performances, after he had doffed his huge high boots, filled us with mixed feelings of envy, admiration and terror. However Mr. Michell, the Commissioner of Limassol, tells me he has taken eggs in the southern range from quite easy sites. The southern sea cliffs, again, where Lord Lilford and Guillemard found the bird at home, would require a rope. Guillemard obtained three young in early May from the eastern part of the Kyrenia hills, and also brought back an egg from the same range. In the summer months a few birds frequent the neighbourhood of the camp on Troödos, and wherever the traveller may be in the island, on a bright day he can usually see high up in the sky one of these great birds majestically soaring and watching for a carcase.

712. VULTUR MONACHUS Linn.

The Black Vulture was thought by Lord Lilford, who did not meet with the species himself, to be only an occasional visitor from Asia Minor. It has not hitherto been very frequently recorded from the island. An immature specimen was sent, in the spring of 1880, from Cyprus to the London Zoological Gardens by Capt. Alexander, R.E., and lived there for some years.

Guillemard came across an old, and a full grown young bird at Morphou and shot the latter, but it is not surprising to hear that its enormous bulk and other difficulties familiar to taxidermists, damped even his desire to make a skin of it. Miss Bate mentions this species casually as sometimes to be seen in company with the preceding, and Glaszner sent Madarász an old male taken on the 2nd of March, 1902, in the Larnaca neighbourhood. The Black Vulture we found to be by no means so common as the Griffon, but we saw perhaps a dozen examples at different times. Mr. Barrett, who had a pair haunting his farm, shot for us, on April the 5th, 1909, a large male, which we were, fortunately perhaps for ourselves, unable to take in hand in time to preserve more of it than the head, wing, and feet. However, it measured 11 ft. 6 in. across the wings. When working the Kyrenia mountains in the third week in March, Horsbrugh and I came across one pair which were obviously nesting in the neighbourhood of Buffavento. Disturbed by a shot, they kept high in the air, and we were unable to make up our minds whether their eyrie was a huge nest at the top of a mighty pine tree at the bottom of a deep gorge into which we could, from the edge of a precipice some 500 ft. above, see quite clearly, or was in one of a series of crevices in the face of a towering cliff in an even more inaccessible situation.

Through the kindness of Mr. Bovill, the locality was watched by one of the Forest Guards, and eventually on the 28th of April, the egg, highly incubated, was obtained from the former site; it contained a live chick. In May and June, Horsbrugh met with the Black Vulture again, breeding on this occasion on the Troödos range, the nest being likewise placed at the top of a pine tree some forty feet from the ground. The young bird was taken by the employés of the Cyprian Mining Co. and was kept for the local director, Mr. A. Artemis, a leading Athenian advocate, and an enthusiastic member of the Cyprus Natural History Society. Mr. Nicolls informs me that he has noticed this Vulture nesting for some years past on the Troödos mountains, and the bird itself is well known to him and to other local sportsmen. It may therefore now be safely regarded as a somewhat uncommon resident in the island.

The egg which we obtained was rather heavily splashed with reddish brown, chiefly at the upper end, and measured 3·58 × 2·76 inches.

713. NEOPHRON PERCNOPTERUS (Linn.).

Unger and Kotschy add the Egyptian Vulture to Sibthorp's list, but it is perhaps rather remarkable that no one seems as yet to have been able to confirm their record.

714. GYPAËTUS BARBATUS (Linn.).

Horsbrugh and I did not expect to find the Bearded Vulture in Cyprus, but in early March, 1909, we came upon a pair in the highest portion of the Kyrenia range. One bird suddenly appeared in view in a deep ravine and sailed over our heads not fifty yards above us. We saw it again several times, and on the following day Horsbrugh observed it—and a second individual also. There could be no possible doubt as to the identification, as we had in view, practically at the same time, the Griffon and the Black Vultures as well as Eagles.

These birds may have soared over from the Taurus Mountains—then visible to us as a long glittering snow patch; but it is not at all unlikely that they had an eyrie in one of the big precipices in the mountains which we were working.

715. CIRCUS ÆRUGINOSUS (Linn.).

In Cyprus I frequently saw Harriers in spring and winter quartering the marshes and the plains, but unless they are shot it is impossible as a rule to identify them with certainty.

The Marsh Harrier is at any rate a fairly common visitor at the spring and autumn migrations, and may be found throughout the winter. It is quite probable that a few pairs nest in one or two localities which are suitable. Lord Lilford found it tolerably common in the marshy districts during his visit; Guillemard, who frequently mentions unidentified "Harriers" in his 'Ibis' articles, shot a male near Larnaca in early February, 1888; Glaszner obtained a male and two females in the same locality in December and

January. On the 16th of November, 1907, I came across a party of four in some rough swampy ground near Kouklia reservoir and shot a splendid old male. In late March of this year (1909) Horsbrugh met with several at the Acheritou and Kouklia reservoirs, but did not obtain a specimen.

717. Circus cineraceus (Montagu).

Montagu's Harrier was added to the Cyprus list by the industry of Glaszner, who sent a single specimen to Madarász taken on September 5th, 1901, near Larnaca. I know of no other local record. It is probably only a visitor on migration and perhaps in winter.

718. Circus swainsoni Smith.

The Pallid Harrier is not very uncommon and my remarks upon the Marsh Harrier might apply to its distribution and appearance.

Lord Lilford had very little doubt that a grey Harrier which he observed several times near Famagusta belonged to this species, but the first definite record was a specimen —presumed to be a male in first year's plumage—sent to him by Pearse, who obtained it on November the 2nd, 1878, at Larnaca; Müller refers to an adult male taken on February the 16th; Guillemard shot another adult male near Limassol on March the 25th, 1887; Glaszner sent to Madarász four collected in September, October, and November.

Horsbrugh came across one or two examples at the reservoirs at the end of March, 1909, and obtained a fine male at Limnia near Salamis on April the 4th, while on the 12th he and I saw another at Athalassa at quite close quarters.

719. Circus cyaneus (Linn.).

The Hen-Harrier is another of Glaszner's additions to the list, he having sent Madarász three—a male specimen taken on February the 1st and two females shot on October the 29th and November the 5th—all near Larnaca.

We did not obtain any specimens of this Harrier, but Horsbrugh thought that he saw two or three at the end of March and beginning of April near the reservoirs.

This species is probably mainly a visitor on migration, some individuals, however, remaining during the winter.

721. Buteo vulgaris Leach.

The Buzzard has hitherto only been obtained by Glaszner, who sent Madarász a single female specimen taken on November the 4th, 1902. I presume it would be only a winter visitor.

[725. Buteo ferox (S. G. Gmel.).

Lord Lilford observed near his yacht, when close to Cyprus on April the 14th, 1875, a bird which he had little doubt was the Long-legged Buzzard. As it has not been recorded by any other observer, it is perhaps doubtful if the species should be included in the local list at all.]

730. Hieraëtus fasciatus (Vieill.).

No one who visits either of the mountain ranges in the island can well avoid seeing Eagles, but as a rule they are too high in the air for identification, and he seldom obtains the chance of a shot. However, generally speaking, I may state that the larger birds are the Imperial, and the smaller Bonelli's Eagle, both of which species are resident in Cyprus.

Guillemard obtained a young female of Bonelli's Eagle with some nestling down still attached, on June the 4th, 1887, from some cliffs near Khrysokhou Bay in the north-west of the island, and at the end of March in the following year, found some Eagles, which he thought were of this species, breeding near the ruins of Kantara Castle. Miss Bate saw birds on Troödos, which she believed to be Bonelli's Eagles, and my own note-book contains many references to this bird, both on the southern range in summer, and the northern in spring. Horsbrugh and I found it undoubtedly breeding at the end of March, 1909, near the ruins of Buffavento in the Kyrenia range, and in winter, on the reservoirs, I have often seen two or three individuals swooping over packs of coot and duck. But we did not find the nest, nor obtain a specimen of the bird itself. It is not a very uncommon resident.

735. Aquila heliaca Savigny.

The Imperial Eagle is a not very rare resident. A fresh unblown egg was brought to Lord Lilford at Trikomo in April, 1875, which, he was informed, had been taken in the neighbourhood of that place a few days previously; this he was completely satisfied had been produced by an Eagle of this species. Guillemard, on his first visit, found the head of an Imperial Eagle, identified by Mr. J. H. Gurney, senr., hung on a cottage door, and thought he observed it on Troödos in early June of 1887; Miss Bate also considered she had identified it in the same locality. Dr. P. L. Sclater mentions in a footnote to Lord Lilford's article, that an Eagle from Cyprus was then (1899) living in the London Zoological Gardens, presented by Col. E. L. Fraser on June the 17th, 1887. It was labelled *A. nævioides* (?), but was, according to Dr. Sclater, probably *A. heliaca.*

On August the 14th, 1907, I came unexpectedly on a pair sitting on an old pine tree not five yards from me, as I turned round a rock almost on the top of Mount Olympus. On the 28th of July, 1908, I found perhaps the same pair nearly in the same place and watched them for some time; on November the 17th, 1908, I picked up a freshly shot male on the shore of Acheritou reservoir; on the 29th of March, 1909, Horsbrugh, who had seen a number of Eagles near the reservoirs, obtained a fine female at Kouklia.

Horsbrugh and I had several times noticed this Eagle when working the Kyrenia mountains towards the end of March (1909), but could not locate its nest. Through the kindness of Mr. Bovill, the principal Forest Officer, the locality was watched, and on April the 29th, the structure, a large clumsy mass of branches placed at the top of a tall pine tree, was discovered by the forest guard, and the two, very slightly incubated, eggs were brought to us; they measured 2·86 × 2·16 and 2·85 × 2·28 inches respectively.

739. Haliaëtus albicilla (Linn.).

Major Jones, late of the 50th Foot, writing in the 'Field' of May 11th, 1889, states that the White-tailed Eagle is sometimes met with in Cyprus. I have no doubt that this statement is correct, as Horsbrugh observed and identified this bird at the Acheritou reservoir during early April of this year, where he had ample opportunity of observing it amongst the water-fowl with which the great sheet of water was covered. He did not succeed in shooting a specimen. It is probably a visitor on migration and perhaps in winter.

[745. ASTUR PALUMBARIUS (Linn.).

Unger and Kotschy add the Goshawk to Sibthorp's list, and attach to the name the Greek word "*Ἱερακι.*" This term was also used by Sibthorp to designate the local name of a hawk which he could not identify, but called *Falco ierax*. "*Ἱερακι*" has no very special meaning in Cyprus, and would be used by a Cypriote for almost any "Hawk."

No one since has observed the Goshawk in the island, and Madarász is of the opinion that Unger and Kotschy mistook large male specimens of the Sparrow-Hawk for Goshawks, and that the name of the present species should be deleted from the Cypriote list. Sibthorp's name *F. ierax* also seems to be suggestive of a bird which appeared to him akin to the Sparrow-Hawk, and does not seem to indicate *Astur palumbarius*; and I therefore agree with Madarász that, at present, the latter has no proper claim to be included in the Cypriote avifauna.]

748. ACCIPITER NISUS (Linn.).

The Sparrow-Hawk was probably one of Sibthorp's unidentified hawks for which he used the Greek name "*Φαλκόνι*," which, under that title, Unger and Kotschy definitely assign to *A. nisus*, though Sibthorp states that *his* bird was "something like a Buzzard." It was not met with by Lord Lilford or Guillemard, nor recorded by Müller, but Pearse sent home an adult male obtained in 1879, and Glaszner despatched eight examples to Madarász, collected near Larnaca in October, November, and January.

Horsbrugh and I came across about a dozen between March the 7th and April the 16th, 1909, in the plains, and obtained several specimens. Mr. Barrett had shot several at his farm at Athalassa during the winter and in the spring, when they work havoc amongst his numerous chickens. The bird appears to be a winter visitor only, and no doubt more common than at other times in the seasons of migration.

The Cypriotes do use the word "Φαλκόνι" to designate this—and other—hawks.

751. Milvus ictinus Savigny.

The Kite is only known in Cyprus from a female sent by Glaszner to Madarász, taken near Larnaca on September 22nd, 1901. It may be sometimes a visitor on migration and perhaps also in winter.

756. Pernis apivorus (Linn.).

Glaszner has the credit of adding the Honey Buzzard to the Cypriote list, he having sent Madarász three male specimens, obtained in the neighbourhood of Larnaca in September and October, 1901. I know of no other local record of this species, but presume it to be an occasional visitor in the spring and autumn migrations.

762. Falco cherrug J. E. Gray.

The Saker has hitherto, so far as I am aware, been very rarely recorded from Cyprus. Lord Lilford's yacht when close to Cyprus, though not in sight of land, was visited by a hawk, which he believed to be of this species. Pearse sent to Lord Lilford an adult male, labelled Beila (probably Pyla, near Larnaca), 14th of October, 1878. Horsbrugh picked up, or rather found in a small tree, a very dilapidated dead bird of this species near Acheritou in early April, 1909, of which he brought home such parts as he could, to be identified by Dr. Sharpe. I suppose that this Falcon, like the preceding species, is an occasional visitor, at the seasons of migration.

764. Falco peregrinus Tunstall.

Mediæval writers speak of Peregrines in Cyprus, and possibly Unger and Kotschy are correct in referring one of Sibthorp's unidentified hawks—which he proposed to call *Falco melanops,* presumably from the local Greek name

"Μαβρομάτι" which he uses—to *F. peregrinus*, though Sibthorp speaks of his bird as having a "blue tail." It is impossible to say with much confidence what Sibthorp meant, but "blue tail" and "Μαβρομάτι" seem to me to fit better La Marmora's Falcon. The Peregrine was not met with by Lord Lilford, but Guillemard makes several references to it in his 'Ibis' articles; he bought a live female in the plumage of the first year in the Famagusta bazaar at the end of February, 1888, shot an adult of the same sex on March the 21st, near the same locality, and found two pairs—presumably nesting—in early May, near the ruins of St. Hilarion Castle on the Kyrenia range. Lord Lilford, however, thought that *F. peregrinus* was only a winter visitor, and that *F. punicus* would be found to be the form of Peregrine breeding in Cyprus. None of us have as yet succeeded in obtaining a specimen of either species, and at present, therefore, I am not in a position to comment confidently on Lord Lilford's suggestion. A Peregrine—whichever it may be—is by no means uncommon; I have frequently seen it on Troödos in the summer, and when shooting at Papho in September, 1908, Mr. T. Greenwood and I were "waited on" persistently by a pair, which in one day took from the former no less than three wounded Turtle-doves. In that district they prey, no doubt, chiefly on the large flocks of Rock-doves which dwell in the southern cliffs, and I have seen the Peregrines swoop and strike as the doves wound down in a straggling stream to the sesame and bean fields. During this September I should say I saw in the Papho neighbourhood, quite a dozen Peregrines. Horsbrugh and I found a pair, evidently nesting, in the precipice below the ruins of Buffavento, but the spot where we thought their eyrie was situated was hopelessly inacessible.

765. Falco punicus Levaill.

Lord Lilford saw a single bird near Salamis on the 1st of May, 1875, which he was sure was the Lesser Peregrine. As mentioned above he was of the opinion that it was probable that this species nested in the island, and that the typical

F. peregrinus was only a winter visitor. However, so far as I am aware, no other record exists of the occurrence of *F. punicus* locally, and my remarks on the preceding species explain my view of Lord Lilford's theory.

768. Falco æsalon Tunstall.

The Merlin in Cyprus is mentioned as early as 1598 (!) but was first definitely recorded by Lord Lilford, who saw one or two examples near Famagusta in April, 1875. Pearse obtained a single specimen in 1879 and Müller mentions an immature male taken on November the 26th. Guillemard does not mention this species in his 'Ibis' articles, but obtained an adult male at Famagusta on March the 20th, 1888. Glaszner sent specimens to Madarász taken in November and December near Larnaca, and Horsbrugh met with it at Acheritou on April the 4th, 1907.

It is a winter visitor.

769. Falco subbuteo Linn.

The Hobby is another of Glaszner's additions to the Cypriote list, he having sent to Madarász three specimens, two males and one female, taken respectively near Larnaca on May the 22nd, 1901, on Tröodos, September the 18th, 1902, and near Livadia on September the 20th, 1901, the last being the female. In the spring specimen the plumage was much worn, indicating, to Madarász's view, that the species probably nests in the island. This of course is possible, but I think it is much more likely that it is only a spring and autumn visitor.

770. Falco eleonoræ Gené.

Eleonora's or La Marmora's Falcon was first observed by Lord Lilford, who found several pairs about the cliffs near Cape Gata on May the 8th, 1875. Guillemard found, and shot a specimen in the same place in early March, 1887, but was apparently unable to retrieve it, but he brought home a fine dark specimen shot in the same neighbourhood in 1886 by an officer of the 49th Foot. Horsbrugh shot a good male at Kouklia near Papho on the 23rd of May, 1909. I think that there is little doubt that this beautiful Falcon is resident, and breeds on these cliffs, which are amongst the few steep shores of the island.

771. Falco vespertinus Linn.

Tinnunculus vespertinus Gray, B. O. U. List, p. 103.

Müller records that Schlüter received from Cyprus no less than twelve specimens of the Red-footed Falcon, consisting of male and female adults and several immature birds, together with a considerable number of clutches of eggs varying in number from four to five, which were taken between the 16th of April and the 23rd of May (1878). Lord Lilford met with this species only on one occasion, namely, on May the 6th, 1875, not far from Limassol, where, towards evening, a considerable number suddenly appeared, one of which he shot. It does not seem to have been observed by Guillemard, but Glaszner sent six to Madarász taken in September and October near Larnaca. I am very doubtful as to the correctness of Müller's statements about the eggs which he received really belonging to this species; from what he writes, it is evident that the consignment of eggs included large numbers of those of the Common and Lesser Kestrels, and as the eggs of the former are very easily confused with those of the Red-footed Falcon, and as Cyprus seems somewhat outside the breeding-range of the present species, I am inclined to regard *F. vespertinus* only as a visitor on its spring and autumn migrations.

773. Falco tinnunculus, Linn.

Tinnunculus alaudarius, B. O. U. List, p. 104.

The Kestrel is a common resident but its numbers are swollen by migrants in spring and autumn: at these seasons migrating-parties of a dozen or a score are often observed. I have many notes of its occurrence during every month in the year. I have taken eggs as early as April 12th and as late as May 23rd, but I have also found the young hatched on the 3rd of May. From our examination of the contents of their crops they would appear to feed entirely on lizards and various large insects. It may often be seen perched on trees or buildings in the centre of the towns.

774. Falco cenchris Naum.

Tinnunculus cenchris, B. O. U. List, p. 104.

The Lesser Kestrel is a very common summer visitor, but though Lord Lilford regarded it as more abundant than the preceding species, such is not our experience, as the large majority of the many Kestrels that we shot and of the nests we took belonged to *F. tinnunclus*. As Guillemard met with it in February it is possible that some individuals remain throughout the winter, but my own notes, at present, cover it over no further a period than March to September. Guillemard seems to have thought that it was nesting in March, but in our experience it does not commence to deposit its eggs till about mid-April, and we found full fresh clutches on the 5th of May. It breeds in Cyprus in the same localities as the preceding species, the eggs, when laid in a crevice of the rocks, lying practically bare in a slight hollow on a little loose soil. We found nothing but lizards, beetles, and locusts and other insects in their crops.

[To be continued.]

II.—*The Ornithological Collections of the University of Cambridge.* By H. Gadow, M.A., F.R.S., Strickland Curator.

The Ornithological Collections belonging to the University of Cambridge are kept in the Museum of Zoology, in charge of the Strickland Curator.

The nucleus of the Museum's Natural History Collections was formed by the Cambridge Philosophical Society, which transferred its specimens to the University.

The Ornithological Department may be said to have come into existence with the bequest of the collection of birds formed by Strickland and the endowment of a Strickland Curatorship, the chief duty of the holder of this post being the custody and arrangement of the " Strickland Collection " and other ornithological collections belonging to the University, or such as the University may still acquire.

The Strickland Collection, consisting of skins and a library, is to be kept separate. The remainder, which we may call the General Collection, comprises skins, stuffed specimens, skeletons and other anatomical preparations, eggs, and a library.

For forty-one years, until a few days before his death, Alfred Newton, Professor of Zoology and Comparative Anatomy, was the life and soul of this department, not only on account of his unrivalled knowledge of things ornithological, but through his never-failing help by world-wide correspondence, his advice and—his criticisms. On his death he left all his Collections and his Library to the University *.

It is known to but a few people how he was always ready with his purse to secure more specimens or even whole collections which the Museum's scanty funds would have

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* The 'Cambridge University Reporter' of June 15, 1907, contains the following extract from the will of the late Professor Newton :—

"I give and bequeath to the Chancellor Masters and Scholars of the University of Cambridge my Natural History Collections and Library together with the Cabinets Cases and Apparatus thereto belonging including all my Copyrights Books Pictures Prints Drawings Letters and Papers relating to Natural History . . . . to be kept for the purposes of the said University and not for the purpose of sale, and to be attached, so far as is convenient, to the Department of Zoology. . . .

"I also give and bequeath to the University the sum of One Thousand Pounds upon trust to invest the same and to apply the annual income thereof to the keeping up and adding to the said Library . . . .

"In a 'Memorandum to my Executors' concerning the bequest [which has been accepted as it stands, by Grace of the Senate, June 18th, 1907] occurs the following passage: 'For my own convenience it has been my practice to make marginal notes and cross references in my own books, and I believe that some of these may prove to be of considerable assistance to anyone who after me may use these copies.'"

The principal objects received by the University under this bequest were the Wolley Collection of Bird's-eggs as augmented by Newton, and the Newton Library including all his papers and MSS., both of which are described below.

put beyond its reach. Many Cambridge men, and others too, have presented their spoils to the Museum, with the result that there is now a fairly good ornithological collection. Of course, it does not rank with any of the large collections of the world, but it makes up for small numbers by the fact that it has been formed with a purpose, for the general, not only for the systematic study of Ornithology.

The following is a short statement of its contents :—

A.—Skins, including about 1200 stuffed specimens, nearly 1000 of which are British-killed specimens.

1. The Strickland Collection, originally 6006 specimens, of 3125 species, now with additions from the Jardine Collection.
2. The General Collection, about 16,700 specimens.

This makes a grand total of about 23,000 specimens, representing some 5700 species, assuming the number of recent species known to be somewhere near 12,000.

The skins are arranged and catalogued according to Gray's Hand-list, chiefly on account of the convenience of the specific numbers in that work.

The following details shew how the General Collection has gradually grown. This is, however, not the place to give a list of all the kind donors, nor to mention any lots which were purchased. The various collections enumerated below have been incorporated in the General Collection, with some notable exceptions.

(1) *The Hepburn Collection*, mostly Californian.

(2) *The Selby Collection.*

(3) *The Swainson Collection.* This was purchased from Dr. Swainson, mainly on account of his many reputed type-specimens; but unfortunately a mystery is attached to them, since the number of specimens actually to hand falls far short of the official list.

(4) *The Madagascar Collection*, with 826 specimens of 238 species, made by the late Sir Edward Newton.

(5) *The Jamaica Collection*, with 563 specimens of 101 species, made by the late Sir E. Newton. These two collections are kept as separate units.

(6) *The Jardine Collection*, with 2063 specimens of 900 species, bought at the Jardine sale in 1886 by Mrs. Strickland and Professor Newton.

(7) *The Farr Collection*, originally of about 1300 skins, collected by the late W. B. Farr in India and presented by his widow.

(8) *The Buckley Collection,* with 382 specimens of Palæarctic birds, collected by the late T. E. Buckley. To be kept separate.

Other collections, made mostly by the Donors.

Col. H. W. Feilden, South Africa and Barbados.
J. H. Gurney, South Africa.
Dr. F. H. H. Guillemard, Celebes.
Prof. Hickson, Celebes.
Dr. Francis Day, India.
Baron A. v. Huegel, Fiji.
C. E. Lister, South America.
G. D. Haviland, Borneo and the Malay Peninsula.
Dr. C. Hose, Borneo.
J. S. Budgett, Gambia.
L. W. Wiglesworth, Fiji.
J. L. Bonhote, Bahamas.
Major Wm. Cooke Daniels, British Guiana.
Chas. B. Storey, Angoni Land.
Miss A. I. M. Elliot, North Celebes.

Professor Newton paid much attention to the Avifauna of certain islands, with the result that some of them are very well represented, notably Jamaica, Madagascar, New Zealand, the Sandwich Islands, and the Galapagos: all these collections are kept separately.

There are not a few rare specimens, *e. g.* Great Auk, Labrador Duck, a 'Beagle' specimen of the Steamer Duck, *Nesonetta aucklandica,* the flightless Cormorant and the flightless Grebe, *Balæniceps rex, Œstrelata hæsitata* from Guadeloupe, *Rhodostethia rosea, Anarhynchus frontalis,* New Zealand Quail, *Nestor productus,* male and female of *Palæornis exsul* from Rodriguez, *Platycercus unicolor, Sceloglaux albifacies,* Rudolph's and Albert's Birds-of-Paradise, *Chætoptila angustipluma, Acrulocercus nobilis* and the Drepanids of the Sandwich Islands, and 'Beagle' specimens of the Galapagos Finches, &c.

B.—OSTEOLOGICAL SPECIMENS, SPIRIT-SPECIMENS, AND VARIOUS ANATOMICAL PREPARATIONS.

The osteological collection contains some 1600 entries, inclusive of fossils, ranging from complete skeletons to single parts.

Special mention should be made of the Dinornithidæ, *Alca impennis*, *Pezophaps*, and *Didus*; *Gallinula nesiotis*, *Aphanapteryx*, *Erythromachus* and *Diaphorapteryx*, *Lophopsittacus* and other subfossils from Mauritius; *Funingus*, *Glaucopis*, *Turnagra*, *Clitonyx*, and *Miro*; not to mention numerous preparations illustrative of special structures, development, degeneration, the inheritance of acquired characters, convergence, &c.

C.—EGGS.

There are several collections of Eggs and a considerable number of Nests.

I. The '*Ootheca Wolleyana*' has 6076 paragraphs or entries of eggs, comprising from 1 to 36 (*cf.* § 4875, Guillemot) specimens each, mostly more than 2, so that the total number surpasses with certainty 12,000, and probably approaches 20,000 specimens. However, anyone who thinks the correct number important enough and worth his time, may count them himself in the well-printed Catalogue. In reality there are a good many more specimens in the Egg-cabinets than are mentioned in the '*Ootheca*'; perhaps these were intended for duplicates. Most of the eggs have been written upon, and every one contains at least a "v. p." and a number. The number refers to a page in the twelve MS. volumes, which are nothing less than Newton's Egg-Diary, begun in the year 1843 and ending, with consecutive pagination, in February 1907, a few months before his death. Comparatively few of this vast number of eggs have yet been properly arranged. Newton, knowing them almost individually, alone knew where to find them in the cabinets, and they were, until recently, his private property.

II. Besides the eggs catalogued in the '*Ootheca Wolleyana*,' Newton made a collection of those of birds outside the Palæarctic region. He, however, did not pay much attention to it. The eggs, many of them decidedly rare, were accepted as they happened to come in, were registered in the Egg-diary and then put away. Altogether there may be about 2500 specimens in this "General Collection."

To tell the truth, Newton never cared much about eggs from a scientific point of view, and he told me more than once that he did not think that much could be got out of their study; in short, that it was not a "logy," as it did not lend itself to deductive conclusions, and that the systematic value of eggs was very limited. "You cannot state upon oath what kind a given egg is, unless you have seen the mother bird fly off, and that is but circumstantial evidence." The interesting correlations between eggs, nests, and environment did not appeal to him, because of the apparent exceptions which seem to prevent safe generalizations. Some of the reasons why, in his later years, he devoted so much painstaking labour to the '*Ootheca*' were rather sentimental: the memory of his friend Wolley, and the delight it gave him to go through his notes, taken when travelling in Lapland, Iceland, and Spitsbergen, more especially Lapland. and thus to live again through old times when he studied Nature in the field, because Newton was essentially, at heart, a Field Naturalist, and a very good one indeed.

III. *The Wilmot-Russell Collection*, made by J. P. Wilmot, left to and augmented by his friend Sir S. L. Russell, whose widow left it to the University. It is properly arranged and catalogued, and contains about 2005 eggs of 325 European species.

IV. *The T. E. Buckley Collection*; containing about 1780 eggs of European species, properly arranged and catalogued.

D.—THE NEWTON LIBRARY.

There are some 57 Journals and Periodicals, recent and ancient, in the Newton Library, comprising just 1001 volumes.

Through the generosity of their owner a sum of money was left to keep up at least the more important Journals (besides such as are taken in by the Department of Zoology) and to purchase special ornithological works which may appear.

Besides these Periodicals there are

195 folio volumes.
897 quarto.
3133 octavo.
169 of small size.

These 4400 volumes may be sorted roughly into

1800 strictly ornithological.
462 volumes of voyages and travels.
226 dealing with North America.
129 ,, ,, Central and South America.
167 ,, ,, Arctic countries.
184 ,, ,, Asia.
189 ,, ,, Australasia.
141 ,, ,, Africa.

The rest, about 1100 in number, relate to Europe, or are miscellaneous—*e. g.* Text-books, General Philosophical works, Biographies, Dictionaries, &c., &c.

Further, there are more than 8000 "pamphlets," mostly ornithological, now in process of being sorted, or being bound up.

Lastly, several dozen volumes of bound-up letters, received during a lifelong correspondence on every imaginable subject, from the reputed laying of some egg to the founding of the B. O. U.

> Besides copies of all the sumptuously-illustrated monographs, the Library is especially rich in "Old Authors"—rather a hobby of Newton's,—many of them reputed to be of great value. He was well known as a bibliophile, but whether a book or pamphlet was old or new, he never hesitated to write freely in it critical notes, cross-references which he alone knew of, corrected dates, &c., and thus he greatly enhanced the value of his books to anyone who may wish to consult them.
>
> The Newton Library is not a public nor a lending library, but every facility for its study in a well-fitted room is, and will always be, gladly given.

Some impatience has been shown about the accessibility of these collections of books and eggs. Their sudden accession raised several difficult problems. Not only does it take time to sort and rearrange such an influx, but it requires space in an already more than crowded museum: and (given time and space) also binding, cabinets, show-cases, catalogues, all costing money, which is well known to be scarce in the case of our *Alma Mater*.

III.—*On the Birds of Paraguay.* By CHARLES CHUBB, Zoological Department, British Museum *.

(Text-figure 1.)

THE collection on which this paper is based was made by Mr. W. Foster in the neighbourhood of Sapucay in 1902, 1903, and 1904. I was in hopes that Mr. Foster would have been able to send me some account of the locality and the circumstances under which the collection was made, but I have not yet heard from him on the subject.

Sapucay, as will be seen by the map (text-fig. 1, p. 54), is situated in about 57° W. Long. and 27° S. Lat. It is on the railway between Asuncion and Ybytimi.

Since the time of Azara, several isolated papers have appeared dealing with the birds of Paraguay, but I do not believe that any collection of such magnitude as that made by Mr. Foster has been received in Europe, and therefore I hope that my present essay will be of some service to ornithology.

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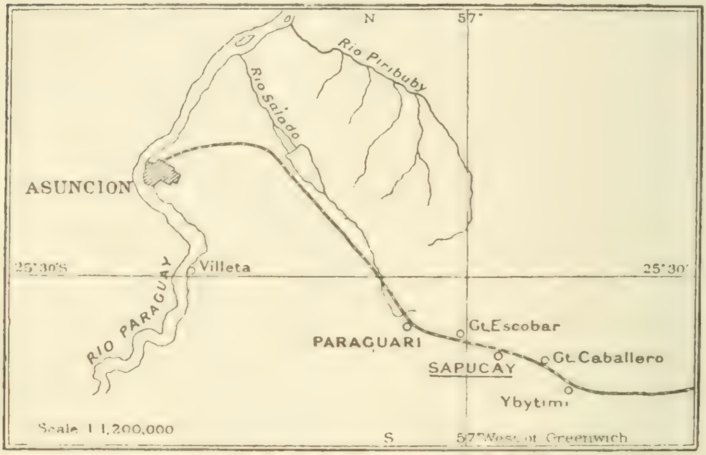
* Published by permission of the Trustees of the British Museum.

Text-fig. 1.


N
57°
Rio Piribuby
Rio Salado
ASUNCION
25°30'S
Villeta
RIO PARAGUAY
25°30'
Gt.Escobar
PARAGUARI
SAPUCAY
Gt.Caballero
Ybytimi
Scale 1:1,200,000
S
57° West of Greenwich

Map of part of Paraguay, showing the position of Sapucay.

The following are some of the principal memoirs which deal with Paraguayan ornithology:—

Azara, F. de.—Apuntamientos para la historia natural de los Páxaros del Paragüay y Rio de La Plata. Madrid, 1802–1805.

Vieillot, L. P.—Nouveau Dictionnaire d'Histoire Naturelle. Paris, 1816–1819.

Hartlaub, Carl J. G.—Systematischer Index zu Don Felix de Azara's Apuntamientos para la historia natural de los páxaros del Paraguay y Rio de la Plata. Bremen, 1847.

Catalogue of the Birds in the British Museum. London, 1874–1898.

Berlepsch, Hans, Graf von.—Systematisches Verzeichniss der von Herrn Ricardo Rohde in Paraguay gesammelten Vögel. Journal für Ornithologie, 1887, pp. 1–37, 113–134.

Bertoni, A. W.—Aves Nuevas del Paraguay. Asuncion, 1901, pp. 1–216.

Oberholser, H. C.—List of Birds collected by William T. Foster in Paraguay. Proc. U.S. Nat. Mus. xxv. pp. 127–147 (1902).

Ihering, H. von.—As aves do Paraguay em comparação com as de São Paulo. Revista do Museu Paulista, vi. pp. 310–344 (1904).

During the preparation of this paper, I have had the advantage of being able to consult Dr. Bowdler Sharpe on all difficult questions, and Mr. C. E. Hellmayr has also very kindly supervised my manuscript.

The original notes written by Mr. Foster during his stay in England are given in brackets [ ] with his initials "*W. F.*"

1. TINAMUS SOLITARIUS.

Ynambú mocoicogoé Azara, Apunt. iii. p. 56. no. cccxxxii. (1805).

Cryptura solitaria Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 105 (1819).

Tinamus solitarius Salvad. Cat. B. Brit. Mus. xxvii. p. 501, pl. vii. (1895); Oates, Cat. Eggs Brit. Mus. i. p. 229 (1901); Bertoni, Aves Nuevas del Paraguay, p. 23 (1901); Ihering, Revista Mus. Paulista, vi. p. 344.

Mr. Foster says that he has never met with this Tinamou himself, but has found its nest on three occasions. The eggs are smooth and glossy in texture and of a peacock-blue colour. He found nests and obtained eggs on Oct. 4, Nov. 15, and Dec. 26, 1904. Their measurements are: axis 2·45–2·6 inches; diameter 1·75–1·95.

Mr. Bertoni (*l. c.*) writes:—"I met with a nest on Nov. 1, at the foot of a tree, with no other foundation but the fallen leaves. It contained four eggs of a lovely bluish green, and measuring 56 × 48 millim."

2. CRYPTURUS TATAUPA.

Ynambú Tatáupá Azara, Apunt. iii. p. 48. no. cccxxix. (1805).

Tinamus tataupa Temm. Pig. et Gall. iii. pp. 590, 752 (1815); Hartl. Ind. Azara, p. 21. no. 329 (1847)

Crypturus tataupa Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 108 (1819); Berlepsch, J. f. O. 1887, p. 37 (Pilcomayo); Salvad. Cat. B. Brit. Mus. xxvii. p. 525 (1895); Seth-Smith, Avic. Mag. (2) ii. p. 285, cum tab. (1904); Ihering, Revista Mus. Paulista, vi. p. 344.

a. ♀ ad. Sapucay, April 19, 1903.

Bill reddish pink; iris warm brown.

b. ♀ ad. Sapucay, July 8, 1904.

Bill bright red; feet purplish red; iris reddish brown.

According to Azara, this is the "House-partridge" of the Guaranis, and inhabits the forests and woods and even plantations which have masses of rank grasses where the bird can hide. He also says that it lays but four eggs. According to Mr. Foster, however, five or six are more frequently laid. Azara remarks that when any person passes close to the nest the mother attacks and attempts to drive away the object of her fears. Mr. Foster did not observe this habit.

The eggs of this species sent by Mr. Foster were obtained during the months of October, November, and December. They vary in colour from pale lavender-grey to a vinous colour and measure: axis 1·45 to 1·7 inches; diameter 1·1 to 1·25.

Full-grown young birds (hatched in confinement), presented to the British Museum by Sir William Ingram, are distinguished by their dark brown, instead of chestnut, upper surface, the dark lead-coloured head, fore-neck, breast, and flanks. On the chest are a few feathers with dusky black subterminal bars, and a few white spots may be seen on some of the wing-coverts and secondaries, occasionally preceded by a black subterminal bar, the greater coverts and secondaries also shew a few scattered spots of dull white.

[Six appear to be a full clutch. I never found any of the eggs hard-set, but sometimes incubation had commenced in clutches of five, so I fancy that six eggs are rarely exceeded. There is no nest, only a depression scratched in the ground, usually near the edge of some of the numerous cattle-tracks and therefore easily discovered. The bird is common. There is much variation in colour between the different clutches of eggs.—*W. F.*]

3. CRYPTURUS UNDULATUS.

Ynambú listado Azara, Apunt. iii. p. 53. no. cccxxx. (1805).

Tinamus undulatus Temm. Pig. et Gall. iii. p. 582 (1815); Hartl. Ind. Azara, p. 21. no. 331.

Cryptura sylvicola Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 107 (1819).

Crypturus undulatus Salvad. Cat. B. Brit. Mus. xxvii. p. 525; Kerr, Ibis, 1892, p. 151 (Rio Pilcomayo); Ihering, Revista Mus. Paulista, vi. p. 344.

a. ♀ ad. Sapucay, March 10, 1903.

Bill black above, of a horn-colour below; feet of a pale greenish slate-colour; iris hazel-brown.

The single specimen sent by Mr. Foster is not altogether identical with the example obtained by Prof. Graham Kerr on the Lower Pilcomayo. The latter specimen is the only one in the British Museum with which I could compare the Paraguay bird, so that I cannot draw any conclusions as to their specific identity or distinctness, as Prof. Kerr's bird is in very poor condition; but I should not be surprised to hear that they are considered distinct, as the Sapucay bird is not only more rufescent, but has less barring on the breast and abdomen. Further specimens are necessary, however, to determine this question.

Azara says that, according to the natives, this bird frequents the large forests only, and is solitary in its habits. It lays four eggs of a glossy greyish colour [N.B.—Vieillot translates *morados lustrados* as "*violet lustré*," but Azara's colour is the correct one.]

Mr. Foster remarks that: "this is a very rare bird: one specimen only was brought to me one day by a boy, who had snared it in the monte. Nothing is known as to its habits."

4. RHYNCHOTUS RUFESCENS.

Ynambú-Guazu Azara, Apunt. iii. p. 34. no. cccxxvi. (1805).

Tinamus rufescens Temm. Pig. et Gall. iii. pp. 552, 747 (1815)

Cryptura guazu Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 103 (1819).

Rhynchotus rufescens Salvad. Cat. B. Brit. Mus. xxvii. p. 548; Oates, Cat. Eggs Brit. Mus. i. p. 12 (1901); Ihering, Revista Mus. Paulista, vi. p. 344.

Mr. Foster's note regarding this bird is as follows:—

[This species is resident and fairly common in all parts of the Republic, though being gradually killed off in the neighbourhood of the small towns. This bird is one of the most difficult to hunt with dogs, as it travels so quickly through the high matted grasses that by the time the sportsman reaches the dog and walks up to flush the bird, it may be some distance away; this is often repeated several times until the hunter gives up in disgust. The eggs are placed in a slight depression of the ground under one of the thick masses of grass; six eggs are rarely exceeded.—*W. F.*]

Thirteen eggs were received from Mr. Foster. They were collected during the months of October, November, and December, and vary in colour from deep lavender-grey to lilac-grey. Axis 2·2 to 2·4 inches; diameter 1·6 to 1·75.

5. NOTHURA MACULOSA.

Ynambúi Azara, Apunt. iii. p. 40. no. cccxxvii. (1805).

Tinamus maculosus Temm. Pig. et Gallin. iii. pp. 557, 748 (1815).

Cryptura fasciata Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 109 (1819).

Nothura maculosa Hartl. Ind. Azara, p. 21, no. 327 (1847); Berlepsch, J. f. O. 1887, p. 37; Salvad. Cat. B. Brit. Mus. xxvii. p. 559 (1895); Oates, Cat. Eggs Brit. Mus. i. p. 13 (1901); Ihering, Revista Mus. Paulista, vi. p. 344.

a. ♀ ad. Sapucay, June 9, 1904.

Bill and feet creamy white; iris buff. Shot in the open camp.

This species is resident and common. The method of hunting it is the same as that recorded by Azara. It is a stupid bird and can be knocked over with a lasso after the horseman has galloped round it two or three times.

Mr. Foster obtained two clutches of three eggs each. One was taken on November 28, 1904, and the other on

December 3 of the same year. The eggs are deep coffee-brown in colour and measure: axis 1·55 to 1·8 inches; diameter 1·15 to 1·25.

6. COLUMBA SYLVESTRIS.

Paloma de la montés Azara, Apunt. iii. p. 11. no. cccxix. (1805).

Columba sylvestris Vieill. N. Dict. d'Hist. Nat. xxvi. p. 366 (1818, ex Azara); Hartl. Ind. Azara, p. 20 (1847); Salvad. Cat. B. Brit. Mus. xxi. p. 289, note (1893).

Columba rufina (nec Temm.), Berlepsch, J. f. O. 1887, p. 124 (Paraguay); Salvad. Cat. B. Brit. Mus. xxi. p. 289 (1892); Ihering, Revista Mus. Paulista, vi. p. 341.

Columba rufina sylvestris Hellmayr, Nov. Zool. xiii. p. 47 (1906); id. op. cit. xv. p. 91 (1908: Goyaz).

a. ♂ imm. Sapucay, April 25, 1903.

Bill black; tarsi and feet purplish red; iris red.

This example differs from the adult bird chiefly in having the vinous colour of the head, neck, and upper breast much less pronounced. The British Museum has also a specimen of this species, in fully adult plumage, obtained at Villa Rica, Paraguay, in October 1906, and presented by the Hon. Wyndham Knatchbull-Hugessen.

I refer specimens from Medellin and Bogota to *C. rufina*. All the forms are closely allied. The differences consist chiefly in the marking of the tail and the colour of the under tail-coverts.

In the Paraguayan bird the grey tips to the tail-feathers are preceded by a very distinct shade of black, which brings out the tip of the feather in strong relief.

This bird, which is *C. sylvestris* of Vieillot, is represented in the Museum from Brazil, Ytarare (*Natterer*), Chapada, Matto-Grosso (*H. H. Smith*), Pelotas, Rio Grande do Sul (*Joyner*), Island of Mexiana (*A. R. Wallace*), and Para (*R. Graham*). It also extends to Peru, as there is a male, in the Salvin-Godman collection, from Guayabamba, obtained by O. T. Baron. The under tail-coverts in this form are entirely leaden grey.

From this bird I propose to separate the following:—

COLUMBA PALLIDICRISSA, sp. n.

Like *C. rufina*, this bird has no distinct subterminal blackish shade on the tail such as is seen in *C. sylvestris*, although there is a slight dusky appearance before the pale end of the feathers. It differs from *C. rufina* in its much paler under tail-coverts, these being white fundamentally, with a slight tinge of pearly grey. The characters seem fairly constant throughout the series of skins in the British Museum.

This species inhabits Central America from British Honduras to Panama. Type, ♂, Costa Rica (*J. Carmiol : Mus. Salvin-Godman*).

The four allied species may be diagnosed as follows :—

a. Cheeks and ear-coverts ashy.

a′. Subterminal shade before the light ashy tips of the tail-feathers distinctly blackish ; under tail-coverts slaty grey .... *sylvestris.*

b′. Subterminal shade before the paler ends of the tail-feathers dusky blackish or dull ashy ; under tail-coverts pale ashy grey .... *rufina.*

c′. Scarcely any sub-terminal shade before the paler ends of the tail-feathers ; under tail-coverts whitish with a slight wash of pearly grey .... *pallidicrissa.*

b. Cheeks and ear-coverts vinous ; under tail-coverts of a dark lead-colour, darker than the abdomen ; tail-feathers black with no subterminal band .... *œnops.*

7. ZENAIDA AURICULATA.

Paloma parda manchada Azara, Apunt. iii. p. 17. no. cccxxii. (1805) ; Vieill. N. Dict. d'Hist. Nat. xxvi. p. 351 (1818).

Columba maculata Vieill. (nec Gm.) Enc. Méth. i. p. 376 (1820), ex Azara.

Zenaida aurita Hartl. Ind. Azara, p. 20. no. 322 (1847).

Zenaida maculata (Vieill.), Berlepsch, J. f. O. 1887, p. 34 (Pilcomayo).

Zenaida auriculata (Des Murs), Salvad. Cat. B. Brit. Mus. xxi. p. 384 (1893) ; Ihering, Revista Mus. Paulista, vi. p. 341.

Zenaida virgata Bertoni, Aves Nuev. Paraguay, p. 24 (1901).

a, b. ♂ ♀ ad. Sapucay, August, 1904.

Bill black; feet red (♂), purple-red (♀); iris brown.

According to Azara, this species was very common in Paraguay and Buenos Ayres, and was found in flocks which rarely numbered fifty individuals; but it more frequently occurred in pairs, perching in the thicker part of the trees about one-fourth of the way from the top. He says also that the bird did not frequent the forest, but procured its food in the open camps and plantations. It was very tame and could be approached quite closely.

Mr. Foster is of opinion, however, that this is now quite a rare bird in Central Paraguay, and lives almost exclusively in the forests.

Mr. Bertoni has separated the Paraguayan form of this bird under the title of *Zenaida virgata*; but Dr. Ihering is of opinion that it is identical with the present species, and with this I agree.

8. COLUMBULA PICUI.

Palomba picui Azara, Apunt. iii. p. 23. no. cccxxiv. (1805).

Columba picui Temm. Pig. et Gallin. i. pp. 435, 498 (1813); Vieill. N. Dict. d'Hist. Nat. xxvi. p. 383 (1818).

Columbula picui Salvad. Cat. B. Brit. Mus. xxi. p. 470; Ihering, Revista Mus. Paulista, vi. p. 341.

a. ♀ ad. Sapucay, August 13, 1904.

According to Mr. Foster, this species is resident and common in the more populated parts of the country, but rare at Sapucay, where he only obtained one specimen.

In looking over the long series of this little Dove in the British Museum, I find that the adult female is very similar to the male, but is browner on the back and head, while the crown is slightly shaded with grey. In young birds there is no grey on the head, this being brown like the back. The outer tail-feather alone is white, the second and third having dull brown edges.

I think that the specimen from Ceara, which is mentioned by Count Salvadori (Cat. B. Brit. Mus. xxi. p. 472), is specifically distinct, and, as Mr. C. E. Hellmayr has pointed out (Abhandl. Akad. München, xxii. p. 696), is *Columbina strepitans* Spix, Av. Bras. ii. p. 57 (1825: Piauhy, N.E. Brazil).

It is similar to *C. picui*, but is distinguished by its very pale uniform grey upper surface, with scarcely any brown tint, by the steel-green bar on the wing, and by the fact that the two outer tail-feathers are white with no greyish margin, this being only faintly indicated on the third feather.

Total length 7·5 inches; culmen 0·6; wing 3·4; tail 3·3; tarsus 0·6.

9. CHAMÆPELIA TALPACOTI.

Paloma roxiza Azara, Apunt. iii. p. 20. no. cccxxiii. (1805).

Columba talpacoti Temm. Pig. i. fam. 3, p. 22, pl. 12 (1808–11); Vieill. N. Dict. d'Hist. Nat. xxvi. p. 385 (1818), ex Azara.

Chamæpelia talpacoti Salvad. Cat. B. Brit. Mus. xxi. p. 485.

Columbigallina talpacoti Ihering, Revista Mus. Paulista, vi. p. 341.

a. ♀ imm. Sapucay, May 1903. Bill of a horn-colour; feet of a pinky flesh-colour; iris dark orange.

b. ♀ ad. Sapucay, August 1904. Iris buff.

c, d. ♂ ad. Sapucay, August 1904. Bill black; feet reddish pink; iris red in one specimen and white in the other.

Mr. Foster sends us eleven eggs of this species. They are pure white without any gloss, and were obtained during the months of November, December, January, and February. The measurements are: axis 0·9 to 1·0 inch; diameter 0·65 to 0·75.

In the adult female, as determined by Mr. Foster, the plumage is browner than in the adult male, being vinous only on the lower back and rump. The general tone on the under surface in the female is ashy grey, washed with sandy brown on the throat and chest, the chin and lower abdomen being white; the under tail-coverts are chestnut with hoary-white edges, as observed by Count Salvadori.

Young males seem to be vinous below shaded with ashy; the under tail-coverts are uniform vinous chestnut, as in the adult males.

[This bird is resident and by no means uncommon. There appears to be no favourite place for nesting, almost any situation being chosen, providing the tree or shrub is dense enough to conceal the nest, while the height at which the nest is placed also varies from 2½ to as high as 7 feet. About Sapucay the nest is generally built along the edge of the forest, but in other parts it can be met with in clumps of bushes in the open camp-lands.—*W. F.*]

10. LEPTOPTILA CHLOROAUCHENIA.

Paloma parda tapadas roxas Azara, Apunt. iii. p. 12. no. cccxx. (1805); Vieill. N. Dict. d'Hist. Nat. xxvi. p. 399 (1818).

Leptoptila chloroauchenia Salvad. Cat. B. Brit. Mus. xxi. p. 554; Ihering, Revista Mus. Paulista, vi. p. 342.

a. ♀ ad. Sapucay, August 25, 1904. Wing 6·0 inches; tail 3·85.

Bill black; feet purplish red; iris orange-buff.

According to Mr. Foster, this bird is a common resident in Paraguay, breeding throughout the year. The nest is placed in a tree some twelve feet from the ground and is a very fragile structure.

Several eggs were sent, all of which were collected in the month of October. They vary in colour from dull white to creamy buff, and measure: axis 1·1 to 1·25 inches; diameter 0·9 to 0·95.

11. LEPTOPTILA CALLAUCHEN.

Leptoptila callauchen Salvad. Boll. Mus. Torino, xii. no. 292, p. 33 (1897); Sharpe, Hand-list B. i. p. 86 (1899).

a. ♂ ad. Sapucay, May 7, 1903. Wing 6·0 inches; tail 3·85.

Bill black; tarsi and feet crimson; iris whitish yellow.

b. ♀ ad. Sapucay, June 10, 1903. Wing 5·8 inches; tail 3·65.

Bill black; tarsi and feet purple-red; iris light brown.

These birds belong to the species described by Count Salvadori as *L. callauchen* from specimens obtained by Dr. Borelli in the Province of Jujuy near Salta in Northern Argentina. *L. callauchen* belongs to the section of *Leptoptila* which contains *L. bahiæ* and *L. reichenbachi*, having a deeper-coloured vinous breast than *L. chloroauchenia*, of which Mr. Foster has also sent an example. From the latter *L. callauchen* differs in the more olive-green colour of the back and in the hind-neck being of a lilac-brown with slight violet reflexions, but no metallic green as in *L. chloroauchenia*; lores and forehead white, merging into pearly grey on the middle of the crown, *L. chloroauchenia* being much darker grey on the crown, and white, not vinous, on the lores, sides of face, and ear-coverts; sides of neck and entire breast dark cinnamon-vinous, paler on the lower throat and inclining to white on the chin; sides of body and flanks brown, the latter darker than the sides of the breast. This colour is scarcely perceptible in *L. chloroauchenia*.

12. Geotrygon violacea.

Paloma roxa y amarillo Azara, Apunt. iii. p. 15, no. cccxxi. (1805).

Columba violacea Temm. Pig. i. fam. iii. p. 67, pl. 29 (1808–11).

Geotrygon violacea Salvad. Cat. B. Brit. Mus. xxi. p. 565.

In the 'Biologia Centrali-Americana' (Aves, iii. p. 265) Dr. Godman has separated *G. albiventer* Lawr., from Panama, from *G. violacea* of Brazil. (*Cf.* also Hellmayr, Nov. Zool. xiii. p. 384 (1906). I take the same view, as I can see some small but apparently constant differences between the two forms. *G. violacea* has somewhat less of the lilac-blue metallic gloss on the mantle, the forehead being pearly grey like the cheeks; the sides of the body have a sandy-buff tint. In *G. albiventer* the sides of the body are pink like the chest; the forehead and cheeks are pale vinous, and the metallic lilac-blue on the mantle is much more intense.

a. ♂ ad. Sapucay, May 15, 1903.

Bill deep crimson; feet crimson; iris orange-brown.

b. ♀ ad. Sapucay, August 31, 1904.

Mr. Foster considers this bird to be very rare in Central Paraguay.

Count Salvadori (Cat. B. Brit. Mus. xxi. p. 565) refers Azara's bird to *G. montana*, but the description is evidently that of *G. violacea*, and the specimens sent by Mr. Foster confirm this, as also does the series in the British Museum. The bird described by Azara does not appear to have been named by Vieillot.

13. LIMNOPARDALUS RYTIRHYNCHUS.

Ypacahá pardo Azara, Apunt. iii. p. 220. no. ccclxxii. (1805).

Rallus rythirhynchus Vieill. N. Dict. d'Hist. Nat. xxviii. p. 549 (1819, ex Azara).

Limnopardalus rytirhynchus Sharpe, Cat. B. Brit. Mus. xxiii. p. 29 (1894); Ihering, Revista Mus. Paulista, vi. p. 342.

a. ♂ ad. Sapucay, November 18, 1902.

This specimen, which is in full plumage, agrees with Vieillot's description.

14. LIMNOPARDALUS NIGRICANS.

Ypacahá obscuro Azara, Apunt. iii. p. 219. no. ccclxxi. (1805).

Rallus nigricans Vieill. N. Dict. d'Hist. Nat. xxviii. p. 560 (1819).

Limnopardalus nigricans Sharpe, Cat. B. Brit. Mus. xxiii. p. 31.

a. ♀ ad. Sapucay, October 15, 1902.

Iris red, tinged with brown.

b. ♀ ad. Sapucay, March 29, 1904.

Bill bronze-green; tarsi and feet coral-red; iris orange-red.

15. ARAMIDES CHIRICOTE.

Chiricote Azara, Apunt. iii. p. 214. no. ccclxviii. (1805).

Rallus chiricote Vieill. N. Dict. d'Hist. Nat. xxviii. p. 551 (1819).

Aramides cayennensis Berlepsch (nec Gm.), J. f. O. 1887, p. 125.

Aramides chiricote Sharpe, Cat. B. Brit. Mus. xxiii. p. 58.

Aramides cajanea chiricote Ihering, Revista Mus. Paulista, vi. p. 342.

a. ♂ ad. Sapucay, September 4, 1904.

Bill pea-green, becoming olive-green towards the base; tarsi and feet purplish red; iris crimson.

According to Mr. Foster, this species is resident and fairly common along the swampy streams of the forest and also on the edges of the large swamps.

The bird takes its name from the manner in which it calls in the evening "*Cherico cherico-co-co.*"

This is the first time that I have had the opportunity of examining a specimen of this species from Paraguay, which is the habitat of the "Chiricote" of Azara.

I have compared it with the series determined by Dr. Sharpe in the British Museum, and find that Mr. Foster's specimen agrees with others from New Granada and Brazil and differs only in the rather paler grey thighs.

16. PORPHYRIOLA MARTINICA.

Fulica martinica Linn. Syst. Nat. i. p. 259 (1766).

Yahanà celeste y verde Azara, Apunt. iii. p. 243. no. ccclxxx. (1805).

Yahanà blanco y celeste Azara, t. c. p. 248. no. ccclxxxi.

Yahanà blanco y pardo acanelado Azara, t. c. p. 251, no. ccclxxx.

Yahanà garganta celeste Azara, t. c. p. 253. no. ccclxxxiii.

Porphyrio cyanoleucos Vieill. N. Dict. d'Hist. Nat. xxviii. p. 27 (1819, ex Azara).

Porphyrio cyanicollis Vieill. t. c. p. 28.

Ionornis martinica Berlepsch, J. f. O. 1887, p. 125 (Paraguay).

Porphyriola martinica Sharpe, Cat. B. Brit. Mus. xxiii. p. 189; Ihering, Revista Mus. Paulista, vi. p. 343.

a. ♂ ad. Sapucay, October 29, 1902.

Iris very light brown.

17. BELONOPTERUS CAYENNENSIS.

Terutéro ó Tetéu Azara, Apunt. iii. p. 264. no. ccclxxxvi. (1805).

Vanellus cayanensis (Gm.), Vieill. N. Dict. d'Hist. Nat. xxxv. p. 206 (1819); Hartl. Ind. Azara, p. 24. no. 386 (1847); Berlepsch, J. f. O. 1887, p. 125 (Paraguay).

Belonopterus cayennensis Sharpe, Cat. B. Brit. Mus. xxiv. p. 163 (1896); Oates, Cat. Eggs Brit. Mus. ii. p. 14 (1902); Ihering, Revista Mus. Paulista, vi. p. 343.

Two clutches of eggs sent by Mr. Foster were collected in October. The ground-colour is ochraceous buff, spotted and blotched with black and chestnut-brown, with underlying spots of greyish purple. The measurements are: axis 1·75 to 1·9 inches; diameter 1·25 to 1·3.

[Owing to the great difference between Argentine and Paraguayan territory, the Teru Teru is by no means abundant, and in the neighbourhood of Sapucay is quite a rare bird. The wide level camp-lands of the south give place to smaller patches of open lands here, and the high rank grasses make it no fit place for a runner such as the Teru Teru. It can still be met with sparingly in swampy districts, but in the wooded parts which are general throughout Central Paraguay, its call is but seldom heard.—*W. F.*]

18. HELODROMAS SOLITARIUS.

Chorlito pardo menor Azara, Apunt. iii. p. 315. no. cccc. (1805).

Tringa solitaria Wils. Amer. Orn. vii. p. 53, pl. 58. fig. 3 (1813).

Totanus punctatus Vieill. N. Dict. d'Hist. Nat. vi. p. 411 (1816, ex Azara).

Totanus solitarius Berlepsch, J. f. O. 1887, p. 37 (Pilcomayo).

Helodromas solitarius Sharpe, Cat. B. Brit. Mus. xxiv. p. 444; Ihering, Revista Mus. Paulista, vi. p. 343.

a. ♂ ad. Sapucay, August 26, 1904.

[This species is apparently resident throughout the swampy parts of the country, and can generally be met with, although its habits make it difficult to shoot. Its flight when flushed is only for a few yards, and nothing will again induce it to rise, the high tangled grass affording ample cover.

In this district it is a rare bird.—*W. F.*]

19. GALLINAGO PARAGUAYÆ.

Becasina prima Azara, Apunt. iii. p. 271. no. ccclxxxvii. (1805).

Scolopax paraguayæ Vieill. N. Dict. d'Hist. Nat. iii. p. 356 (1816).

Gallinago paraguayæ Berlepsch, J. f. O. 1887, p. 36 (Pilcomayo); Sharpe, Cat. B. Brit. Mus. xxiv. p. 650; Oates, Cat. Eggs Brit. Mus. ii. p. 63; Ihering, Revista Mus. Paulista, vi. p. 343.

a. ♂ ad. Ybytimi, February 3, 1904.

Three clutches of the eggs of this species were sent. They were collected during the months of October, November, and January. The ground-colour is olive, blotched and marbled with blackish to dark umber-brown, with pale underlying spots of purple. The blotches cluster at the larger end. The measurements are: axis 1·55 to 1·6 inches; diameter 1·1 to 1·2.

[Resident and fairly common through the country, although, compared with the Argentine, it is rare; but, generally speaking, specimens can always be met with along the water-courses and small swamps which are found within every few hundred yards here.—*W. F.*]

20. PARRA JACANA.

Parra jacana Linn. Syst. Nat. i. p. 259 (1766); Berl. J. f. O. 1887, p. 35 (Pilcomayo); Ihering, Revista Mus. Paulista, vi. p. 343.

Jacana jacana Sharpe, Cat. B. Brit. Mus. xxiv. p. 82 (1896).

a. ♂ imm. Ybytimi, February 5, 1904.

Bill of a greenish horn-colour; tarsi and feet greyish green; iris olive-yellow.

This young bird was shot in a swamp. It is very similar to that described by Dr. Bowdler Sharpe (Cat. B. Brit. Mus. xxiv. p. 82), but has the chestnut colour of the adult plumage just appearing.

Ybytimi is twenty miles south-east of Sapucay, and a very similar district [*W. F.*].

21. POLYBORUS THARUS.

Falco tharus Molina, Saggio St. Nat. Chil. p. 264 (1782).

Caracará Azara, Apunt. i. p. 42. no. iv. (1802).

Polyborus vulgaris Vieill. N. Dict. d'Hist. Nat. v. p. 257 (1816, ex Azara).

Polyborus tharus Sharpe, Cat. B. Brit. Mus. i. p. 31 (1874); Berlepsch, J. f. O. 1887, p. 122 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 337.

a. ♂ ad. Sapucay, August 19, 1904.

Cere and bare skin round the eye of a deep salmon-colour; tarsi and feet yellow; iris bright brown.

[Resident and not uncommon in this district: it invariably goes in pairs all the year round. Its food consists almost exclusively of grasshoppers, frogs, and small snakes. I have never noticed any carrion propensities in the Paraguayan specimens.

As the bird is never interfered with, it has become wonderfully tame, and horsemen can approach it to within a few yards: it will then fly quietly to one side.—*W. F.*]

22. MILVAGO CHIMANGO.

Chimango Azara, Apunt. i. p. 47. no. v. (1802).

Polyborus chimango Vieill. N. Dict. d'Hist. Nat. v. p. 260 (1816).

Ibycter chimango Sharpe, Cat. B. Brit. Mus. i. p. 41 (1874).

Milvago chimango Hartl. Ind. Azara, p. 1 (1847); Berlepsch, J. f. O. 1887, p. 122 (Paraguay); Sharpe, Hand-list B. i. p. 244 (1899); Ihering, Revista Mus. Paulista, vi. p. 337.

a. ♂ ad. Ybytimi, February 10, 1904. Bill, tarsi, and feet yellow; iris clear light brown.

This specimen had not quite completed its moult, as may be seen from the fact that many of the old feathers on the breast, as well as on the upper parts, have lost their webs, which are abraded so that the shafts remain quite bare for a considerable portion of their length.

23. MICRASTUR RUFICOLLIS.

Micrastur ruficollis (part.) Sharpe, Cat. B. Brit. Mus. i. p. 76 (1874); id. Hand-list B. i. p. 216 (1899); Ihering, Revista Mus. Paulista, vi. p. 337.

Thrasyaccipiter seminocturnis Bertoni, Aves Nuev. Paraguay, p. 164 (1901).

Sparrius ruficollis (nec Vieill.), Richmond, Proc. U.S. Nat. Mus. xxxv. p. 645 (1908).

Mr. Bertoni has described the Paraguayan bird as a new form and placed it in a new genus under the title of *Thrasyaccipiter seminocturnis* (*cf.* Bertoni, *l. c.* p. 164), but according to Dr. Ihering and Mr. C. W. Richmond it is identical with *Micrastur ruficollis*.

a. ♀ ad. Sapucay, July 5, 1904.

Bill black; tarsi and feet pale green in front and bright yellow behind; iris brown.

b. ♂ ad. Sapucay, August 18, 1904.

Bill black, cere and circle round the eyes yellow; tarsi and feet yellow; iris pale brown.

The male bird received from Mr. Foster is in full adult plumage, and compared with the specimens of *M. ruficollis* in the National Collection is of a darker slate-colour above, as also on the sides of the neck, cheeks, and ear-coverts. The white bars on the tail-feathers are fewer in number, narrower, and, in some cases, scarcely perceptible. The throat is somewhat darker and the rufous patch on the breast stands out in greater contrast. The dark bars on the under surface of the body are narrower and more numerous. Total length 14·6 inches; culmen, from base of forehead, 0·6; wing 6·5; tarsus 2·1; middle toe and claw 1·55.

The female is darker chocolate-brown above than any females of *M. ruficollis* in the Museum, and has the head blackish; the white bars on the tail-feathers are narrower and more numerous; the rufous colour on the chin, throat, fore-neck, and sides of neck is darker and duller; the dark bars on the under surface are blacker and much broader; the white bar on the sides of the upper neck is broad and well pronounced. Total length 14·6 inches; culmen, from base of forehead, 0·75; wing 6·8; tail 6·8; tarsus 2·55; middle toe and claw 1·45.

24. PARABUTEO UNICINCTUS.

Gavilan mixto obscuro y canela Azara, Apunt. i. p. 94. no. xix. (1802).

Falco unicinctus Temm. Pl. Col. i. pl. 313 (1824: Rio Grande, Brazil).

Buteo unicinctus Hartl. Ind. Azara, p. 2. no. 19 (1847).

Antenor unicinctus Berlepsch, J. f. O. 1887, p. 27 (Lambaré).

Parabuteo unicinctus Sharpe, Hand-list B. i. p. 247 (1899); Ihering, Revista Mus. Paulista, vi. p. 337.

a. ♀ imm. Sapucay, May 28, 1903. Bill of a slate-colour; cere yellowish green; tarsi and feet yellow; iris brown.

Mr. Foster says that this specimen was shot on the edge of the forest.

25. ACCIPITER PILEATUS.

Esparvero azulejo Azara, Apunt. i. p. 118. no. xxvi. (1802).

Falco pileatus Temm. Pl. Col. i. pl. 205 (1823: Brazil).

Accipiter pileatus Hartl. Ind. Azara, p. 2 (1847); Sharpe, Cat. B. Brit. Mus. i. p. 153 (1874); Berlepsch, J. f. O. 1887, p. 122 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 337.

a. ♀ ad. Sapucay, October 18, 1902. Iris orange-red.

This specimen, which is in full plumage, has the back of a dark slate-colour with black shaft-lines; crown black; upper wing-coverts dark brown; tail banded with brown and black; under surface of body of a pale slate-colour with black shaft-streaks; under tail-coverts whitish; thighs, under wing-coverts, and axillaries rufous.

I can find no difference between this example and others from Brazil.

Three eggs, collected on October 19, 1902, are dull white without any markings beyond a few underlying cloudings of a somewhat darker tint. The measurements are: axis 1·8 to 1·9 inches; diameter 1·4 to 1·5.

26. HETEROSPIZIAS MERIDIONALIS.

Falco meridionalis Lath. Ind. Orn. i. p. 36 (1790: Cayenne).

Gavilan de estero acanelado Azara, Apunt. i. p. 72. no. xi. (1802).

Buteo rutilans Hartl. Ind. Azara, p. 1 (1847).

Heterospizias meridionalis Sharpe, Cat. B. Brit. Mus. i. p. 160; Berlepsch, J. f. O. 1887, p. 123 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 337.

a. ♀ ad. Sapucay, August 14, 1904. Bill blackish above, grey below, yellow at base; feet light orange-yellow; iris warm light brown.

[This species is somewhat rare, but widely distributed through Central and Southern Paraguay.—*W. F.*]

27. RUPORNIS PUCHERANI.

Esparvero ceja blanca Azara, Apunt. i. p. 116. no. xxv. (1802).

Esparvero indayé Azara, t. c. p. 131. no. xxx.

Asturina pucherani J. & E. Verreaux, Rev. et Mag. de Zool. 1855, p. 350 (South America); Sharpe, Cat. B. Brit. Mus. i. p. 205 (1874).

Rupornis nattereri saturata Berlepsch, J. f. O. 1887, p. 28 (Lambaré).

Rupornis pucherani Sharpe, Hand-list B. i. p. 257 (1899).

Potamolegus superciliaris, var. *furvicollis* Bertoni, Aves Nuev. Paraguay, p. 161 (1901), = *Rupornis pucherani* Ihering, Revista Mus. Paulista, vi. p. 337, = *Asturina pucherani*, Richmond, Proc. U.S. Nat. Mus. xxxv. p. 635 (1908).

a. ♀ ad. Sapucay, May 2, 1903.

Bill of a slate-colour, black at tip; cere and bare skin round the eye yellow; tarsi and feet orange-yellow; iris yellow.

b. ♀ imm. Sapucay, August 31, 1904.

This young bird has five black bands on the tail, whereas there are only four in the adult bird. The upper tail-coverts are white in the young with black bars or heart-shaped spots, but in the old bird the upper tail-coverts are sandy buff with rufous bars.

The under surface is very different from that of the adult, the throat and chest being white with longitudinal brown centres to the feathers, the entire breast and abdomen also white, transversely barred with brown (these bars less distinct on the lower abdomen and reduced to small terminal spots on the under tail-coverts), and the thighs slightly more sandy buff and somewhat closely barred with brown.

The old bird is altogether more rufous below, the throat being blackish with a few streaks of sandy buff, the feathers of the fore-neck and chest pale ferruginous with blackish shaft-lines and sandy-buff edges to the feathers, the breast and abdomen regularly barred with pale ferruginous on a sandy-buff ground, the bars rather narrower on the lower flanks and abdomen and reduced to narrow and incomplete heart-shaped or V-shaped bars on the under tail-coverts; the thighs brighter sandy rufous, with dull ferruginous bars, not very distinct, while this colour of the thighs stands out in contrast to the pale colour of the abdomen.

Mr. Bertoni has separated this bird under the name of *Potamolegus superciliaris*, var. *furvicollis* (*cf.* Bertoni, *l. c.* p. 161), but according to Dr. Ihering and Mr. C. W. Richmond it is inseparable from *Rupornis pucherani.*

28. URUBITINGA URUBITINGA.

Brazilian Eagle Lath. Gen. Syn. i. p. 41 (1781: Brazil).

Falco urubitinga Gm. Syst. Nat. i. p. 265 (1788, ex Lath.).

Gavilan mixto chorreado Azara, Apunt. i. p. 88. no. xvii., juv. (1802).

Gavilan mixto pintado Azara, t. c. p. 92. no. xviii., juv.

Gavilan mixto negro Azara, t. c. p. 96. no. xx., adult.

Urubitinga zonura Sharpe, Cat. B. Brit. Mus. i. p. 213 (1874).

Hypomorphnus urubitinga Berlepsch, J. f. O. 1887, p. 28 (Lambaré).

Urubitinga urubitinga Sharpe, Hand-list B. i. p. 258 (1899); Ihering, Revista Mus. Paulista, vi. p. 338.

a. ♂ imm. Sapucay, March 8, 1904.

Bill of a dark horn-colour; tarsi and feet yellow; iris golden brown.

This specimen is in full plumage, but retains a little of the immature rufous colour on the breast and sides of the neck.

29. Ictinia plumbea.

Falco plumbeus Gm. Syst. Nat. i. p. 283 (1788: Cayenne).

Alcon azulejo Azara, Apunt. i. p. 167. no. xxxvii. (1802).

Ictinia plumbea Vieill. N. Dict. d'Hist. Nat. xvi. p. 76 (1817: Paraguay); Sharpe, Cat. B. Brit. Mus. i. p. 364 (1874); Berlepsch, J. f. O. 1887, p. 123 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 339.

a. ♀ ad. Ybytimi, January 31, 1904.

Bill black; tarsi and feet orange-chrome; iris crimson.

30. Falco albigularis.

Falco albogularis Daud. Traité, ii. p. 131 (1800: Cayenne); Sharpe, Cat. B. Brit. Mus. i. p. 401 (1874); Kerr, Ibis, 1892, p. 142 (Lower Pilcomayo); Ihering, Revista Mus. Paulista, vi. p. 339.

Hypotriorchis melanogyne Bertoni, Aves Nuev. Paraguay, p. 168 (1901: Alto Parana), *cf.* Ihering, l. c.

a. ♀ ad. Sapucay, March 26, 1904.

Bill of a slate-colour; cere and circle round the eye yellow; tarsi and feet pale orange.

31. Cerchneis australis.

Falco sparverius var. *australis* Ridgway, Hist. N. Amer. B. iii. p. 166 (1874: Parana).

Cerchneis sparveria cinnamomina Berlepsch, J. f. O. 1887, p. 123 (Paraguay).

Tinnunculus sparverius cinnamominus Ihering, Revista Mus. Paulista, vi. p. 339.

a. ♀ ad. Sapucay, November 30, 1902.

Iris light warm brown.

b, c. ♂; *d, e.* ♀ ad. Sapucay, April 25, 1904.

Bill of a slate-colour at the tip, lighter at the base; cere and bare skin round the eyes yellowish; feet buff, claws black; iris brown.

The two males have blue heads with a little patch of rufous on the occiput. One has the back almost devoid of black bars, whereas in the other, obtained on the 25th of April, there are numerous broad black bars. The hen birds, whether they have blue heads or a little rufous on the crown, are always distinguished by the brown streaks on the breast and sides of the body, whereas in the male these parts have black spots, very distinct on the sides.

Four eggs were sent, collected on November 29, 1902. Three of these have a whitish ground-colour: one has minute chestnut-coloured spots evenly distributed over the entire surface, except at the larger end, where there are scarcely any at all; the second is similar, but has large blotches of chestnut-colour at the larger end; the third has a cluster of blotches of the same colour at the large end; while the fourth has a reddish ground-colour with large spots distributed over the entire surface of the egg.

[Resident and common all through Paraguay, nesting invariably in holes of trees. Along the streams which flow through the open camps and in the southern province, it lives to a very great extent upon fish and small reptiles. I have only seen the birds singly, never in pairs, and the nesting-habits are unknown to me.—*W. F.*]

32. PIZORHINA CHOLIBA.

Chóliba Azara, Apunt. i. p. 218. no. xlviii. (1802).

Strix choliba Vieill. N. Dict. d'Hist. Nat. v. p. 39 (1817, ex Azara).

Scops brasilianus (nec Gm.), Sharpe, Cat. B. Brit. Mus. ii. p. 108 (1875); Berlepsch, J. f. O. 1887, pp. 27, 122 (Lambaré); Kerr, Ibis, 1892, p. 141 (Rio Paraguay); Oates, Cat. Eggs Brit. Mus. ii. p. 328.

Pizorhina choliba Ihering, Revista Mus. Paulista, vi. p. 336.

a, b. ♀ ad. Sapucay, October 1902.

Both of these specimens are of the dark phase, and in full adult plumage, with rufous thighs and tarsi.

c. ♂ ad. Sapucay, March 24, 1904.

This bird is of the red phase, whitish below with bold longitudinal dark streaks; the thighs, tarsi, and feet are pale rufous, becoming whitish towards the toes.

d. Ad. Sapucay, May 3, 1904.

Bill and toes of a greenish slate-colour; iris yellow. This example is somewhat intermediate in colour between the dark and red phase.

Two eggs collected on October 14, 1902, and three others obtained on October 20, 1903, are dull white in colour and measure: axis 1·3 to 1·4 inches; diameter 1·15 to 1·25.

33. GISELLA IHERINGI.

Gisella iheringi Sharpe, Bull. B. O. C. vii. p. xl (1899: São Paulo, Brazil); id. Hand-l. B. i. p. 295 (1899).

a. ♀ imm. Sapucay, September 28, 1902.

This bird is blackish brown above, somewhat darker on the head and nape, with tawny bases to the feathers of the hind-neck and scapulars; wing-coverts similar in colour to the back, with white spots on the outer webs towards the tips; primary-coverts blackish, with a white spot on the inner webs; primary and secondary quills blackish-brown, with white spots on both webs; upper tail-coverts like the back; tail-feathers black, with white spots on both webs, the two white spots at the tips of the feathers almost confluent; forehead to the middle of the crown of a buff-colour, somewhat paler and more extended on the sides of the latter; lores and eyebrows black, as also the ear-coverts, this same colour extended in a line towards the sides of the throat; on the middle of the throat a black patch extending in a line on to the sides of the neck; cheeks, sides of face, sides of neck, sides of body, and entire under surface tawny rufous; under wing-coverts buff; quills brown below.

Total length 8·3 inches; culmen 0·8; wing 5·7; tail 2·5.

The species was only known previously by the type (with which this specimen has been compared) described by Dr. Bowdler Sharpe (*cf. supra*) as from São Paulo, Brazil. Dr. Ihering, however, has written to say that the type specimen came from S. Lourenzo, Rio Grande do Sul ('Ibis,' 1900, p. 217).

This bird is new to the avifauna of Paraguay.

34. SPEOTYTO GRALLARIA.

Strix cunicularia (nec Linn.), Molina, Sagg. St. Nat. Chil. p. 343 (1782).

Urucureá Azara, Apunt. i. p. 214, no. xlvii. (1802).

Strix grallaria Temm. Pl. Col. i. pl. 146 (1822).

Athene cunicularia Hartl. Ind. Azara, p. 4 (1847).

Speotyto cunicularia Sharpe, Cat. B. Brit. Mus. ii. p. 142; Berlepsch, J. f. O. 1887, p. 122 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 336.

Speotyto cunicularia grallaria Hellmayr, Abhandl. Akad. München, xxii. p. 574 (1906).

a. ♀ ad. Sapucay, May 25, 1903.

Bill and claws greenish yellow.

This specimen has an admixture of rufous streaks on the head and back of neck, and a rufous wash on the abdomen.

b. ♂ ad. Sapucay, June 5, 1904.

Iris yellow.

This example is much paler both on the upper and under surface, and shews no trace of rufous such as is observed in the female. The feathers are much worn and abraded.

[Resident and widely distributed throughout Paraguay, but nowhere common. The favourite post of observation is the top of one of the ant-hills which are to be met with everywhere. I have never observed it in the forests; and in wooded districts it is only seen occasionally, the conditions being very different when the ground is entirely concealed from sight by the rank vegetation which forms a curtain many feet thick.—*W. F.*]

35. GLAUCIDIUM BRASILIANUM.

Strix brasiliana Gm. Syst. Nat. i. p. 289 (1788).

Carbué Azara, Apunt. i. p. 225. no. xlix. (1802).

Strix ferox Vieill. N. Dict. d'Hist. Nat. vii. p. 22 (1817, ex Azara).

Glaucidium ferox Sharpe, Cat. B. Brit. Mus. ii. p. 200; Berlepsch, J. f. O. 1887, p. 122 (Paraguay).

Glaucidium brasilianum Berlepsch, Bull. B. O. C. xii. p. 8 (1901); Ihering, Revista Mus. Paulista, vi. p. 337.

Glaucidium brasiliense Berlepsch, t. c. p. 8.

Glaucidium ferox rufus Bertoni, Aves Nuev. Paraguay, p. 179 (1901); Ihering, l. c.

a, b. ♂ ad. Sapucay, April and May 1903.

Bill and claws yellow; iris golden. Shot in monte during the day.

c. ♂; *d, e.* ♀ ad. Sapucay, April and June 1904.

The male birds are darker and smaller, while the females are larger and more inclined to rufous in colour.

[This species is resident and by no means uncommon throughout the wooded districts of Central Paraguay. It is often to be met with tame in the native houses, and makes a pleasant little pet when young, but invariably makes for the forest when adult. Of course this is easy enough, as none of the houses are many yards distant from some wood. Although it is not rare I have never met with its nest, and know nothing whatever about its breeding-habits.—*W. F.*]

[To be continued.]

IV.—*On the Birds of Northern Rhodesia and the Katanga District of Congoland.* By S. A. NEAVE, M.A., B.Sc., F.Z.S., M.B.O.U.

(Plates I. & II., and Text-fig. 2.)

THE following paper deals chiefly with the birds that I collected during my second expedition in the years 1907 and 1908; the former year (1907) having been spent in Katanga, and the latter (1908) mainly in the more northern portions of North-east Rhodesia. I have already recorded the birds collected on the first Expedition in a paper published in the 'Memoirs and Proceedings of the Manchester Literary and Philosophical Society' (vol. 51, pt. iii.). The majority of the species of the first collection, even when not represented by skins, are now again mentioned with additional notes as to their distribution and habits. There are also a few species, mostly of large size, which were observed but of which skins were not brought home.

I have already described the general features of the country traversed and have pointed out * the marked influence which the great Mchinga Escarpment, west of the Luangwa Valley, has upon the distribution of the local fauna. Very many of the birds in the Luangwa Valley at the foot of the Escarpment are characteristically South African, whilst Central-African birds appear immediately the top of the Plateau is reached, with, especially in Katanga, an admixture of species belonging to the tropical West Coast. Apart from special localities, such as Lake Bangweolo which swarms with water-birds, the open plains which are tenanted by many species of Larks and Longclaws, and the patches of dense forest which are full of Ground-Thrushes, Bulbuls, and forest-loving Flycatchers. The most interesting bird-life is, perhaps, to be found in the rather thin woodland which covers a very large proportion of the country.

It is in this woodland that, as Marshall and other observers have pointed out, large parties made up of many species of insectivorous birds are met with. These birds are usually to be found travelling slowly in a definite direction, searching the trees and bushes for insects as they go along. An actual party of this nature observed near Kambove on March 29th, 1907, comprised examples of the following birds:—*Irrisor viridis* (4 or 5), *Rhinopomastus cyanomelas schalowi* (1), *Thamnolæa shelleyi* (2 pairs), *Tchitrea plumbeiceps* (1 pair), *Batis molitor* (several), *Dendropicus hartlaubi* (1 pair), *Salpornis salvadorii* (1), *Parus afer* (1), *Parus rufiventris* (1), and several specimens of *Eremomela* and other Tree-Warblers, besides several species of Sun-birds. Other birds which are frequently to be seen in these parties are *Dryoscopus hamatus, Nilaus nigritemporalis, Elminia albicauda, Hyliota australis, Zosterops* spp., *Anaplectes* sp., and occasionally *Coracina pectoralis* *.

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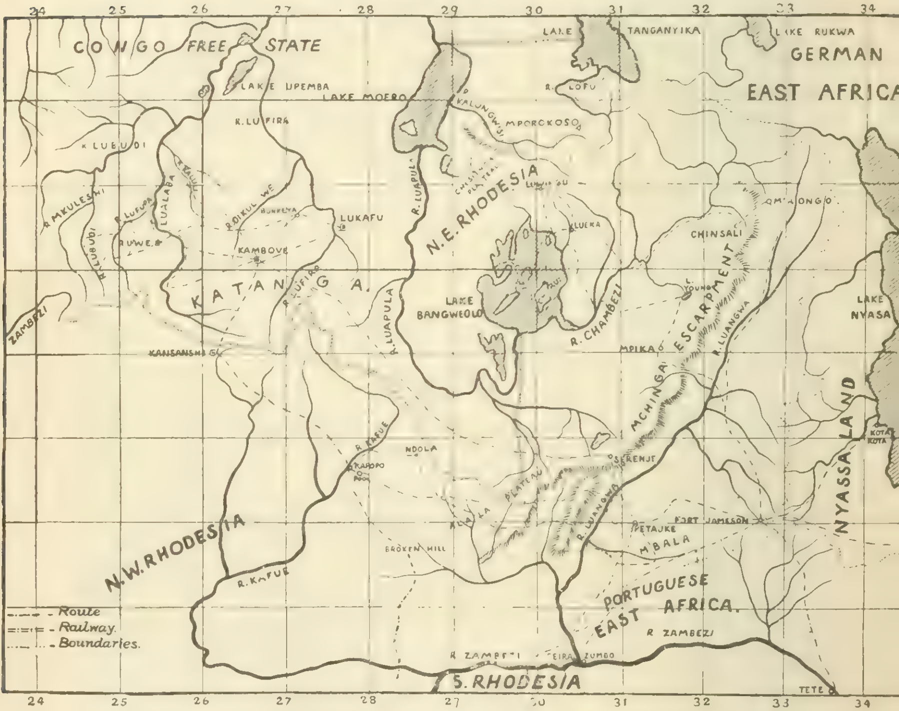
* In a paper read before the Royal Geographical Society (Nov. 22nd, 1909).

What object these birds can have in associating together in such numbers is not very clear. It has been suggested that they may obtain some protection from hawks under these circumstances. Personally I incline to the view that by travelling through the woodland in such numbers they greatly benefit each other by the disturbance they cause among the insects upon which they prey.

Text-fig. 2.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LAKE MOERO
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R. LUBUDI
R. MKULESHI
R. LUFUPA
LUALABA
RUWE
R. DIKULWE
BUNKEYA
LUKAFU
KAMBOVE
KATANGA.
R. LUFIRA
R. LUAPULA
R. LUAPULA
ZAMBEZI
KANSANSHI
LAKE
TANGANYIKA
LAKE RUKWA
GERMAN
EAST AFRICA
R. LOFU
KALUNGWISI
MPOROKOSO
N.E. RHODESIA
LUEKA
LAKE BANGWEOLO
R. CHAMBEZI
CHINSALI
L. YOUNG
ESCARPMENT
MCHINGA
R. LUANGWA
MPIKA
LAKE NYASA
KOTA KOTA
NYASSALAND
R. KAFUE
KAFOPO
NDOLA
SERENJE
PLATEAU
BROKEN HILL
R. LUANGWA
PETAUKE
FORT JAMESON
M'BALA
N.W. RHODESIA
R. KAFUE
PORTUGUESE EAST AFRICA.
R. ZAMBEZI
R. ZAMBEZI
FEIRA
ZUMBO
S. RHODESIA
TETE
- Route
- Railway.
- Boundaries.

Sketch-map of Northern Rhodesia and the adjacent territories.

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* This fact has also been noticed in West Africa by Mr. G. L. Bates ('Ibis,' 1905, p. 462). —EDD.

Among the bird-inhabitants of this woodland that are much more independent in their habits are the Bush-Shrikes of the genera *Prionops* and *Sigmodus*, which live by themselves in small parties, and the Hornbills of the genus *Lophoceros*, besides a Thrush (*Turdus tropicalis*), which usually prefers a thicket at the foot of a big termites' mound.

The collection made on the second Expedition which is here recorded comprises some 820 skins, in addition to about 560 which were made on the first trip. Except for a few which were snared or trapped by natives, I shot nearly all the birds myself. I managed, however, to depute the bulk of the work of making the skins to natives that I trained for the purpose. The majority of the specimens, including the types, remain in the British Museum.

Before giving a detailed account of the species collected, I must express my deep indebtedness to Dr. R. Bowdler Sharpe, Mr. W. R. Ogilvie Grant, and Mr. Charles Chubb, of the British Museum, for the great assistance they have afforded me in the identification of a large number of species.

The following Itinerary gives a list of the places visited during the two Expeditions, while the sketch-map (text-fig. 2, p. 80) indicates their position.

First Expedition, 1904–1906.

1904.	
Feb. 22–28	Chinde to Tete.
Feb. 29–March 12	Tete to Fort Jameson, N.E. Rhodesia.
March 13–April 18	Fort Jameson, 4000 feet (rainy season).
April 19–May 6	Fort Jameson to Feira at the junction of the Luangwa and Zambezi Rivers (end of rains).
May 7–Oct. 20	Mid Zambezi and Lower Luangwa Valley 1200–1500 feet (dry season).
Oct. 21–Nov. 9	Up mid-Luangwa Valley, Feira to Petauke (beginning of rains).
1905.	
Nov. 10 (1904)–Apr. 26 (1905).	Petauke, east side of Luangwa Valley, 2400 feet (wet season).
April 27–May 20	Mbala country, S.E. of Petauke, 3500 feet.

1905 (*continued*).

May 21–Aug. 31	Low ground in Luangwa Valley, 1400 feet (dry season).
Sept. 1–10	Petauke to Lukashashi River.
Sept. 11–15	Edge of Mchinga Escarpment to Mkushi, 4000 feet.
Sept. 16–Oct. 13	Ndola and district, N.W. Rhodesia, 4000 feet (early spring).
Oct. 14–28	Upper Kafue Valley and Kapopo, 4000 feet.
Oct. 29–Nov. 24	Eastward across southern Serenje district to edge of Mchinga's (beginning of rains).

1906.

Nov. 25 ('05)–Jan. 6 ('06)	Petauke and surrounding district.
Jan. 7–14	Petauke to Fort Jameson.

Second Expedition, 1907–1908.

1907.

Jan. 4–12	N.W. Rhodesia, Broken Hill to Kapopo, Upper Kafue, 4000 feet (wet season).
Jan. 13–28	Kapopo to Kansanshi, 4999 feet.
Jan. 29–Feb. 3	Kansanshi to Kambove, Congo State.
Feb. 4–March 8	Kansanshi, 4500 feet.
March 9–April 7	Upper Dikulwe Valley, 3500–4000 feet.
April 9–16	High plateau between valleys of Dikulwe and Lualaba, 4500 feet.
April 17–May 13	Low ground in the valley of Kaluli and Lualaba Rivers, 2500–3500 feet (end of rains).
May 14–31	Upper Lualaba Valley, high plateau, 4000 feet.
June 1–9	Upper Lualaba to Kambove.
June 10–28	Upper Lufira Valley, 3500 feet.
June 29–July 16	Kambove.
July 17–24	Kambove to Lukafu, mid-Lufira Valley, 3000 feet.
July 28–Sept. 18	Bunkeya, 3000 feet.
Sept. 19–27	Bunkeya to Ruwe.
Sept. 28–Oct. 17	Upper Lufupa River, 3500–4000 feet.
Oct. 18–23	Upper Lubudi River, 3500 feet (early spring, first sign of the rains).
Oct. 24–31	Upper Lufupa River.
Nov. 1–6	Lower Lufupa to Ruwe.
Nov. 7–18	Ruwe to Kambove.
Nov. 19–Dec. 12	Through Eastern Katanga, south of bend of Luapula to English boundary, Serenje district, N.E. Rhodesia.
Dec. 13–30	Serenje district, 4500 feet.

1908.	
Dec. 30 ('07)-Jan. 2 ('08)	From edge of Mchinga Escarpment across Luangwa to Petauke.
Jan. 3–13	Petauke.
Jan. 14–21	Petauke to Fort Jameson.
Jan. 22–Feb. 6	Fort Jameson.
Feb. 7–March 31	Up mid and upper Luangwa Valley to Mirongo, 1500–2000 feet (height of rains).
April 1–12	Up Mchinga Escarpment to Chinsali and district, 4500 feet.
April 13–May 20	Mid-Chambezi Valley, 4000 feet (end of rains).
May 21–26	Chambezi to Luena.
May 27–June 20	Luena district and east shore of Lake Bangweolo.
June 21–July 5	Chishi, Mbawala, and Chirui Islands on Lake Bangweolo, 3900 feet.
July 10–22	Luwingu district, 4300 feet.
July 24–31	Luwingu to Mporokoso, 4500 feet.
Aug. 1–10	Upper Lofu Valley, 4000 feet.
Aug. 11–17	Lower Lofu Valley, 3000–3500 feet.
Aug. 18–27	High plateau between Lofu Valley and Lake Tanganyika, 4000–5000 feet.
Aug. 28–Sept. 3	Mporokoso.
Sept. 4–10	Upper Kalungwisi Valley.
Sept. 11–17	Lower Kalungwisi Valley.
Sept. 18–26	High plateau, Kalungwisi district.
Sept. 27–Oct. 1	Luwingu.
Oct. 2–23	Luwingu to mouth of Chambezi.
Oct. 24–Nov. 5	Mouth of Chambezi to Lake Young, 4500 feet.
Nov. 6–9	Lake Young to Mpika.
Nov. 10–23	Mpika to Fort Jameson. First rains.

Fam. PHASIANIDÆ.

1. FRANCOLINUS SHELLEYI.

Francolinus shelleyi Grant; Neave, Memoirs & Proc. of the Manchester Lit. & Phil. Society, vol. 51, pt. iii. p. 1.

This bird differs from the allied species in not being an inhabitant of the thickets &c. of river valleys. It is found in the woodland on hills and plateaux.

2. FRANCOLINUS NATALENSIS.

Francolinus natalensis (Smith); Neave, loc. cit. p. 2.

This and the following species frequent low ground. I did not meet with either to the west of the Mchinga Escarpment.

3. FRANCOLINUS JOHNSTONI.

Francolinus johnstoni (Shelley); Neave, loc. cit. p. 3.

4. FRANCOLINUS COQUI.

Francolinus coqui (A. Smith); Reich. Vög. Afrikas, vol. i. p. 492; Grant, Cat. Birds B. M. xvii. p. 143 (1893).

No. 220. ♀ ad. Upper Lualaba R., 3800 ft., May 30, 1907.

Bill—yellow base, black tip, brownish horn-colour over nostrils; feet orange-yellow; iris light brown.

I very rarely actually saw this bird, which seems rather shy. Its cry of "Jessee" many times repeated is, however, not infrequently heard in the woodland towards evening.

5. PTERNISTES MELANOGASTER.

Pternistes melanogaster Neum.; Neave, loc. cit. p. 3.

By no means uncommon in the Luangwa Valley. Not a plateau species.

6. PTERNISTES SWAINSONI.

Pternistes swainsoni (Smith); Neave, loc. cit. p. 4.

No. 471. ♂. Lundazi R., Upper Luangwa Valley, 2000 ft., March 3, 1908.

Bill—upper mandible dusky brown; lower mandible, nostrils, and all bare skin on face and neck scarlet; feet dark brown; tarsi reddish brown; iris dark brown.

The same remarks apply to this species as to the last.

7. PTERNISTES CRANCHI.

Pternistes cranchi (Leach); Neave, loc. cit. p. 4.

No. 291. ♂ juv. Bunkeya R., 3000 ft., July 27, 1907.

Bill brownish horn-coloured, lower mandible pinkish; feet salmon-pink; iris brown.

No. 300. ♂ ad. Bunkeya R., July 31, 1907.

Bill brick-red; feet red; iris dark olive-brown; other bare parts red.

No. 301. ♀ ad. Bunkeya R., July 31, 1907.

Bill and feet red; iris dark brown; bare parts red.

No. 304. ♀ ad. Bunkeya R., Aug. 1, 1907.

Bill and feet red; iris dark brown; bare parts red.

No. 305. ♀ juv. Bunkeya R., Aug. 1, 1907.

Bill above brownish horn-coloured, below whitish horn-coloured; feet red; iris dark olive-brown.

This is the only species of *Pternistes* met with west of the Mchinga Escarpment. It there replaces the two foregoing.

Fam. NUMIDIDÆ.

8. NUMIDA MITRATA.

Numida mitrata Pall.; Neave, loc. cit. p. 5.

Confined to the Luangwa Valley, and does not surmount the Mchinga Escarpment.

9. NUMIDA MARUNGENSIS.

Numida marungensis Schal.; Neave, loc. cit. p. 6.

No. 80. ♂. Dikulwe R., 4000 ft., March 13, 1907.

Bill horn-coloured, red at base; feet dusky chocolate; iris brown.

No. 306. ♂. Bunkeya R., 3000 ft., Aug. 2, 1907.

Bill horn-coloured, red at base; feet dark chocolate; iris dark brown.

No. 673. ♂. Lofu R., L. Tanganyika, 3000 ft., Aug. 17, 1908.

Bill pale whitish horn-coloured, tinted red at base; feet very dark chocolate-brown; iris dark hazel.

The other bare parts of this individual, a very old male, were: *cere and ridge above the eye* red; *casque* orange, becoming horn-coloured at base; *chin, cheeks,* and around eye and ear pale greenish blue; *throat* cobalt-blue; nape and back of neck black, with a few spots of greenish blue at the sides; *lappets* cobalt-blue tipped with red.

This specimen, which was exceptionally large, measured in the flesh: length 25·5 inches; wing 12; tail 6·75; tarsus 3.

10. GUTTERA EDOUARDI.

Guttera edouardi (Hartl.); Neave, loc. cit. p. 6.

This bird was confined to the low ground of the Zambezi basin.

Fam. PTEROCLIDÆ.

11. PTEROCLES BICINCTUS.

Pterocles bicinctus (Temm.); Neave, loc. cit. p. 7.

Confined to the Luangwa Valley.

Fam. TRERONIDÆ.

12. VINAGO SCHALOWI.

Vinago schalowi Reich. O. C. 1880, p. 108; id. Vög. Afrikas, vol. i. p. 399.

No. 156. ♀. S. Kalule R., Lualaba Valley, 2500 ft., April 27, 1907.

Bill with crimson base, blue-grey tip; feet orange-yellow, claws grey; iris blue.

No. 159. ♂. Lualaba R., 2400 ft, April 28, 1907.

Bill with crimson base, tip whitish; feet coral-red, claws greyish; iris blue.

No. 282. ♀. Kambove, 4500 ft., July 11, 1907.

Bill greyish white, base scarlet; feet orange; iris blue.

No. 380. ♂. Lufupa R., 4000 ft., Oct. 2, 1907.

Bill—proximal half scarlet, distal half greyish white; feet orange; iris blue.

13. VINAGO WAKEFIELDI.

Vinago wakefieldi Sharpe; Neave, loc. cit. p. 7.

14. VINAGO DELALANDII.

Vinago delalandei (Bonap.); Neave, loc. cit. p. 8.

Fam. PERISTERIDÆ.

15. TURTUR SEMITORQUATUS.

Turtur semitorquatus (Rüpp.); Neave, loc. cit. p. 8.

No. 106. ♀. Dikulwe R., 4000 ft., March 23, 1907.

Bill dusky purplish; feet lilac; iris orange-scarlet, orbit reddish purple.

No. 405. ♀ juv. Lubudi R., 3600 ft., Oct. 19, 1907.

Bill dark brownish; feet dark reddish brown; iris orange-brown, orbit slaty brown.

16. TURTUR CAPICOLA DAMARENSIS.

Turtur damarensis Finsch & Hartl.; Neave, loc. cit. p. 9.

No. 177. ♂. Busanga, Lualaba R., 3000 ft., March 10, 1907.

Bill dusky, tinted with purple at gape; feet purplish lilac; iris very dark brown.

No. 249. ♂. Upper Lufira, Katanga's, 3600 ft., June 23, 1907.

Bill black; feet reddish purple; iris black.

The last example approaches more nearly to the typical *T. capicola* than to the form *damarensis*.

17. TURTUR AMBIGUUS.

Turtur ambiguus Bocage; Reich. Vög. Afrikas, vol. i. p. 416.

No. 298. ♀. Bunkeya R., 3500 ft., July 30, 1907.

Bill dusky; feet reddish purple; iris golden yellow, orbit red.

No. 299. ♂. Bunkeya R., July 31, 1907.

Bill dusky; feet reddish lilac; iris pale golden, orbit red.

No. 319. ♀. Bunkeya R., Aug. 13, 1907.

Bill dusky; feet purplish red; iris pale golden, orbit red.

This bird is distinctly local. It frequents the banks of rivers on low ground. It is easily recognisable in life by the brick-red colour of the eyelids and skin around the eye.

18. TURTUR SENEGALENSIS.

Turtur senegalensis (L.); Neave, loc. cit. p. 9.

No. 303. ♂. Bunkeya R., 3500 ft., Aug. 1, 1907.

Bill dusky; feet pinkish lilac; iris dark hazel.

No. 334. ♂. Bunkeya R., Aug. 23, 1907.

Bill dusky; feet amethyst-pink; iris brown.

This species is ubiquitous, though nowhere abundant.

19. ŒNA CAPENSIS.

Œna capensis (L.); Neave, loc. cit. p. 10.

Ubiquitous, usually frequents native gardens.

20. TYMPANISTRIA TYMPANISTRIA.

Tympanistria tympanistria (Temm. & Knip); Neave, loc. cit. p. 10.

No. 686. ♂. Lofu Valley, Aug. 26, 1908.

Bill dull purplish; feet dark purple; iris dark brown.

No. 687. ♂. Lofu Valley, L. Tanganyika, 4000 ft., Aug. 26, 1902.

Bill dull purplish; feet rosy purple; iris dark brown.

A distinctly uncommon and shy species in this district. Except in the very early morning and late evening, it is only to be found in dense forest or bush.

21. CHALCOPELIA CHALCOSPILOS.

Chalcopelia chalcospilos (Wagl.); Neave, loc. cit. p. 10.

No. 115. ♂. Dikulwe R., 4000 ft., March 26, 1907.

Bill dark purplish horn-coloured; feet dark magenta; iris brown.

No. 125. Ad. Dikulwe R., March 31, 1907.

Bill lilac purple, tipped with pinkish orange; feet reddish purple; iris dark brown.

No. 327. ♂ juv. Bunkeya R., 3000 ft., Aug. 10, 1907.

Bill dark purplish horn-coloured; feet brownish lilac; iris brown.

No. 650. ♀ juv. Lofu R., L. Tanganyika, 4000 ft., Aug. 8, 1908.

Bill dark purplish; feet dull lilac; iris dark brown.

This species is ubiquitous, and its curious cry, consisting of a scale of descending notes, is an almost invariable accompaniment to a walk in the woodland.

With regard to the difference between *C. afra* and the so-called *C. chalcospilos*, it is of some interest to note that on the Dikulwe River, Katanga, I shot examples of both forms within a few days of each other. The specimen no. 125 has only one purple spot on *one* wing, whereas no. 115 has several green spots.

Fam. RALLIDÆ.

22. CREX EGREGIA.

Crex egregia Peters; Neave, loc. cit. p. 11.

23. LIMNOCORAX NIGER.

Limnocorax niger (Gm.); Neave, loc. cit. p. 11.

No. 288. ♀. Bunkeya R., 3000 ft., July 26, 1907.

Bill greenish yellow; feet salmon-pink; iris and orbit bright red.

Nos. 295, 296. ♂ ♀. Bunkeya R., July 29, 1907.

Bill greenish yellow, tipped with grey; feet coral-red; iris and orbit red.

No. 356. ♂. Bunkeya R., Sept. 3, 1907.

Bill sulphur-yellow, tip greenish yellow; feet red; iris and orbit scarlet.

This bird is hard to shoot, but is numerous on most of the larger rivers.

24. PORPHYRIO PORPHYRIO.

Porphyrio porphyrio (L.); Reich. loc. cit. p. 290.

No. 810. ♀. Lake Young, Nov. 1, 1908.

Bill dull red, base of lower mandible and around nostril whitish; feet and legs salmon-pink, claws brownish; iris reddish brown.

This bird is probably not rare, but often overlooked on account of its retiring habits.

Fam. LARIDÆ.

25. LARUS CIRROCEPHALUS.

Larus cirrocephalus (Vieill.); Reich. Vög. Afrikas, vol. i. p. 44.

No. 604. ♂ ad. Lake Bangweolo, 3800 ft., July 8, 1908.

Bill dull crimson; feet crimson-scarlet; iris creamy white, orbit dull red.

Not uncommon on Lake Bangweolo. There called "Luandwe."

26. RHYNCHOPS FLAVIROSTRIS.

Rhyncops flavirostris Vieill.; Reich. loc. cit. vol. i. p. 76.

This bird is by no means uncommon in small parties, but is never so abundant as on the Upper Shire, Nyasaland. I did not observe it on Lake Bangweolo.

Fam. CHARADRIIDÆ.

27. XIPHIDIOPTERUS ALBICEPS.

Xiphidiopterus albiceps (Gould) ; Neave, loc. cit. p. 12.

28. LOBIVANELLUS LATERALIS.

Lobivanellus lateralis (A. Smith) ; Reich. Vög. Afrikas, vol. i. p. 194.

No. 817. ♀ ad. Near Lake Young, Mansya R., 4500 ft., Nov. 2, 1908.

Bill bright yellow, the distal third black ; feet and legs pale greenish yellow ; iris pale golden, with an inner ring of grey ; orbit bright yellow ; upper wattle red, lower wattle bright yellow.

This bird occurs sparingly on open plains near water on the High Plateau country.

29. OXYECHUS TRICOLLARIS.

Oxyechus tricollaris (Vieill.) ; Neave, loc. cit. p. 12.

30. ÆGIALITIS TENELLA.

Ægialitis tenellus (Hartl.) ; Neave, loc. cit. p. 13.

31. HIMANTOPUS HIMANTOPUS.

Himantopus himantopus (L.) ; Neave, loc. cit. p. 14.

32. TRINGOIDES HYPOLEUCUS.

Tringoides hypoleucus (L.) ; Sharpe, Cat. B. Brit. Mus. vol. xxiv. p. 456 (1896) ; Reich. loc. cit. vol. i. p. 224.

No. 652. ♂. Lofu R., L. Tanganyika, Aug. 9, 1908.

Bill olive-brown ; feet pale greenish yellow ; iris very dark brown.

No. 808. ♀ ad. Lake Young, Mansya R., Nov. 1, 1908.

Bill brownish ; feet pale olive-yellowish ; iris brown.

33. GLOTTIS NEBULARIUS.

Glottis nebularius (Gunner) ; Neave, loc. cit. p. 14.

34. RHYACOPHILUS GLAREOLA.

Rhyacophilus glareola (Gm.) ; Sharpe. Cat. B. Brit. Mus. xxiv. p. 490.

Totanus glareola Reich. loc. cit. vol. i. p. 222.

No. 497. ♂. Chambezi Valley, 4000 ft., April 15, 1908.

Bill dusky, base of lower mandible greenish yellow; feet and tarsi greenish yellow; iris dusky.

No. 709. ♂. Kalungwisi R., 4000 ft., Sept. 9, 1908.

Bill dusky, base of lower mandible greenish yellow; feet and legs greenish yellow; iris dusky.

Nos. 736, 737, 740. ♀ ♀. Machinga Plateau, Kalungwisi District, 4000 ft., Sept. 19, 20, 1908.

Bill dusky olive at base; feet dull green; tarsi dirty yellow; iris dark brown.

No. 797. ♀. Luliugila R., E. of L. Bangweolo, Oct. 26, 1908.

Bill dusky, greenish olive at base; feet pale greenish olive; iris very dark brown.

35. ROSTRATULA CAPENSIS.

Rostratula capensis (L.); Neave, loc. cit. p. 15.

This bird was abundant on the partially flooded plains to the east of Bangweolo, in June and July.

Fam. PARRIDÆ.

36. ACTOPHILUS AFRICANUS.

Actophilus africanus (Gm.); Neave, loc. cit. p. 15.

No. 601. ♀. Lake Bangweolo, 3800 ft., July 6, 1908.

Bill and frontal shield blue-grey; feet bluish grey; iris dark brown.

No. 777. ♂. E. shore of L. Bangweolo, 3800 ft., Oct. 15, 1908.

Bill and frontal shield blue-grey; feet greenish slate-coloured; iris dark brown.

Usually very abundant in suitable localities. It is called "Tantamaungi" on Lake Bangweolo.

37. MICROPARRA CAPENSIS.

Microparra capensis (A. Smith); Reich. loc. cit. vol. i, p. 270.

No. 503. ♂. Chambezi Valley, 4000 ft., April 17, 1908.

Bill brownish olive; feet pale yellowish olive; iris brown.

No. 504. ♀. Chambezi Valley, April 17, 1908.

Bill brownish olive; feet greenish olive; iris brown.

I only met with this bird on a large swamp called Nashinga in the Upper Chambezi Valley. It takes to wing more readily and flies more strongly than *Actophilus africanus*.

Fam. GLAREOLIDÆ.

38. GLAREOLA PRATINCOLA.

Glareola pratincola (L.); Sharpe, Cat. B. Brit. Mus. xxiv. p. 53.

Glareola fusca Reich. loc. cit. vol. i. p. 144.

Nos. 707, 708. ♂ ♀. Kalungwisi R., 4000 ft., Sept. 9, 1908.

Bill—distal half black, proximal half scarlet; feet and iris dark brown.

This bird occurred sparingly, feeding on the newly burnt ground, on the plains of the Kalungwisi Valley, in September, and again near L. Young at the beginning of November. I never saw it elsewhere.

39. GALACTOCHRYSEA EMINI.

Galactochrysea emini (Shell.); Sharpe, Cat. B. Brit. Mus. xxiv. p. 171.

Glareola emini Reich. loc. cit. vol. i. p. 147.

No. 407. ♂. Lubudi R., 3800 ft., Nov. 22, 1907.

Bill—culmen and tip of both mandibles black, remainder scarlet; feet dusky red; tarsi scarlet; iris dusky.

No. 430. ♀. Lufupa R., 3500 ft., Nov. 3, 1907.

Bill—tip black, base and gape scarlet; feet dusky red; tarsi scarlet; iris brown.

This handsome little bird is not uncommon in rocky places on the upper waters of the rivers Lualaba, Lufupa, and Lubudi.

Specimen no. 430 contained a fully developed egg. This is of the usual *Glareola* type, being white, thickly covered with distinct spots and scribblings of blackish brown and underlying smudges of purplish grey.

The egg measures axis 1·3 inch, diameter 0·9.

Fam. CURSORIIDÆ.

40. RHINOPTILUS SEEBOHMI.

Rhinoptilus seebohmi Sharpe ; Neave, loc. cit. p. 16.

No. 476. ♂. Upper Luangwa, 2000 ft., March 7, 1908.

Bill—base, gape, and orbit sulphur-yellow, culmen and tip blackish; feet and tarsi pale yellowish, toes darker; iris dark brown.

Only met with in the Luangwa Valley, where it is common.

41. RHINOPTILUS CHALCOPTERUS.

Rhinoptilus chalcopterus (Temm.) ; Neave, loc. cit. p. 16.

No. 212. ♀. Upper Lualaba, 3500 ft., May 25, 1907.

Bill dusky, base of lower mandible and gape purplish; feet dusky, legs pinkish purple; iris dark brown; orbit crimson.

No. 818. Juv. Mansya R., near Lake Young, 4500 ft., Nov. 2, 1908.

Bill black, base of lower mandible and gape rosy pink; feet pale flesh-pink, darker toward toes; iris dark brown, orbit pink.

Fam. ŒDICNEMIDÆ.

42. ŒDICNEMUS VERMICULATUS.

Œdicnemus vermiculatus (Cab.) ; Neave, loc. cit. p. 16.

So far as my experience goes, this bird is confined to the sand-banks &c. of the Luangwa River.

Fam. OTIDIDÆ.

43. OTIS MELANOGASTER.

Otis melanogaster (Boc.) ; Neave, loc. cit. p. 17.

No. 499. ♂ juv. Chambezi Valley, 4000 ft., April 16, 1908.

Bill greenish yellow, upper surface of upper mandible dusky; feet and legs pale yellowish brown; iris golden brown.

This seems to be almost the only Bustard throughout a considerable portion of the country.

44. OTIS DENHAMI.

Otis denhami Childr.; Reich. loc. cit. p. 245.

No. 760. ♀. Luena R., E. of L. Bangweolo, 4000 ft., Oct. 7. 1908.

Bill brownish, lower mandible dirty white, tipped with brown; feet dirty yellowish white; iris hazel.

This bird occurred sparingly, and usually singly, on the open plains in the Kalungwisi District and to the east of L. Bangweolo. It is shy, and when alarmed runs at a considerable speed. It is easily recognisable at a considerable distance by the bright rufous colour of the back of its neck.

45. OTIS KORI.

Otis kori Burch.; Reich. loc. cit. vol. i. p. 242.

I saw one of these fine birds on the Upper Lufupa River, near the watershed, in Oct. 1907, but I did not succeed in shooting it.

Fam. GRUIDÆ.

46. BUGERANUS CARUNCULATUS (Gm.); Reich. loc. cit. p. 262.

Nos. 508, 509. ♂ ♀. Chambezi Valley, 1000 ft., April 19, 1905.

Bill pale reddish brown, wattled base dull red; feet and legs black; iris orange-yellow.

This species is not uncommon in the open country on the High Plateau, especially in the L. Bangweolo district. It is not at all shy. It is usually in pairs, but I have sometimes seen as many as five individuals together.

47. BALEARICA REGULORUM.

Balearica regulorum (Bennett); Reich. loc. cit. vol. i. p. 265.

This bird is not uncommon in small parties, especially in low-lying river-valleys. It is frequently to be seen more or less domesticated.

Fam. IBIDIDÆ.

48. IBIS ÆTHIOPICA.

Ibis æthiopica (Lath.); Reich. loc. cit. vol. i. p. 321.

This bird occurred in small numbers on Lake Bangweolo and on the Mansya R. near Lake Young. It is extremely wary and difficult to approach.

49. HAGEDASHIA HAGEDASH.

Hagedashia hagedash (Lath.); Sharpe, Cat. B. Brit. Mus. xxvi. p. 19.

Theristicus hagedash Reich. loc. cit. vol. i. p. 325.

No. 603. ♀. Lake Bangweolo, July 8, 1908.

Bill dusky, basal half of culmen dull red; feet dull reddish; legs and tarsi dusky; iris pale yellow.

A common inhabitant of wooded spots on river-banks throughout the country. It is usually met with in pairs and is rather wary. Its extremely harsh cry is frequently heard in the early morning or when alarmed. It is called "n͡ga n͡ga" by the natives almost everywhere.

50. PLEGADIS FALCINELLUS.

Plegadis falcinellus (L.); Sharpe, Cat. B. Brit. Mus. xxvi. p. 29.

Plegadis autumnalis (Hasselq.); Reich. loc. cit. vol. i. p. 329.

No. 735. ♂. Machinga Plateau, Kalungwisi district, 4200 ft., Sept. 19, 1908.

Bill pale olive-grey; feet dusky; iris dark brown.

I found this an uncommon bird, occasionally occurring in small numbers on shallow pans in open plains.

Fam. CICONIIDÆ.

51. PSEUDOTANTALUS IBIS.

Pseudotantalus ibis (L.); Neave, loc. cit. p. 17.

I never observed this species out of the Luangwa Valley, where it is not uncommon.

52. DISSURA MICROSCELIS.

Dissoura microscelis (Gr.); Reich. loc. cit. p. 347.

No. 414. ♀. Lufupa R., 4000 ft., Oct. 27, 1907.

Bill dusky, culmen and tip dull red; feet dusky, legs dark brownish; iris dull red, outwardly greyish; eyelids black.

I only met with this bird in this one locality, where I saw a few solitary individuals on the plains.

53. CICONIA ALBA.

Ciconia ciconia (L.); Sharpe, Cat. B. Brit. Mus. xxvi. p. 299; Reich. loc. cit. p. 345.

This species is not infrequently seen from November to March. It is usually in very large parties.

54. CICONIA NIGRA.

Ciconia nigra (L.); Neave, loc. cit. p. 18.

55. ANASTOMUS LAMELLIGERUS.

Anastomus lamelligerus (Bonn.); Reich. loc. cit. p. 335.

No. 602. ♀. L. Bangweolo, July 7, 1908.

Bill—the basal half whitish, the rest black; feet black; iris dark brown.

In large flocks on L. Bangweolo, not met with elsewhere. It is locally called "Lushiwa" by the natives.

56. EPHIPPIORHYNCHUS SENEGALENSIS.

Ephippiorhynchus senegalensis (Shaw); Reich. loc. cit. vol. i. p. 341.

This bird is common, singly or in pairs, throughout the country wherever there are open plains. It is very wary and difficult to approach.

57. LEPTOPTILUS CRUMENIFERUS.

Leptoptilus crumeniferus (Less.); Neave, loc. cit. p. 18.

I found the Marabou extremely common on the plains in the neighbourhood of Lakes Bangweolo, Mweru, and Tanganyika during August and November.

Fam. SCOPIDÆ.

58. SCOPUS UMBRETTA.

Scopus umbretta (Gm.); Neave, loc. cit. p. 19.

Ubiquitous.

Fam. ARDEIDÆ.

59. ARDEA GOLIATH.

Ardea goliath Cretzschm.; Reich. loc. cit. p. 376.

This fine Heron is not uncommon on Lake Bangweolo and similar spots, but is very shy.

60. ARDEA MELANOCEPHALA.

Ardea melanocephala (Vig. & Childr.); Reich. loc. cit. vol. i. p. 380.

No. 481. ♀. Upper Luangwa R., 2000 ft., March 18, 1908.

Bill—upper mandible and tip of lower dusky, base and gonys of lower mandible whitish; feet and legs black; iris pale yellow, orbit greenish yellow shaded with dusky.

61. ARDEA PURPUREA.

Ardea purpurea (L.); Reich. loc. cit. vol. i. p. 377.

No. 593. ♂. Lake Bangweolo, July 4, 1908.

Upper mandible brown, lower mandible orange-yellow; feet yellow; tarsi and feet dusky in front, yellow behind; iris yellow, skin in front of eye pale yellow. Called "Mkaza" on L. Bangweolo.

62. MESOPHOYX BRACHYRHYNCHA.

Mesophoyx brachyrhyncha (Brehm); Sharpe, Cat. B. Brit. Mus. xxvi. p. 87.

Herodias brachyrhyncha Reich. loc. cit. vol. i. p. 389.

No. 601. ♂. Lake Bangweolo, July 6, 1908.

Bill orange-yellow; feet and tarsi black; legs dirty yellowish; iris pale yellow; skin around eye pale yellow.

This bird seems to be always gregarious. It is called "Lukowa" on L. Bangweolo, a similar word "Kakowa" being widely used for most species of Egret.

63. HERODIAS ALBA.

Herodias alba (L.); Reich. loc. cit. vol. i. p. 388.

No. 809. ♀. Lake Young, Nov. 1, 1908.

Bill orange yellow ; feet and legs black ; iris pale yellow ; skin around eye greenish yellow.

This bird measured in the flesh : length 41·5 inches, wing 14·1, culmen 5·1, tarsus 5·9.

I found this large Egret very shy. It is usually solitary.

64. NYCTICORAX NYCTICORAX.

Nycticorax nycticorax (L.) ; Reich. loc. cit. vol. i. p. 362.

No. 816. ♀. Mansya R., L. Young, 4500 ft., Nov. 2, 1908.

Bill—upper mandible blackish, base and edges yellow, lower mandible greenish yellow, tipped with black ; feet bright yellow ; iris carmine ; orbit greenish yellow.

Nos. 822, 823. ♂ ♀. Mansya R., Nov. 4, 1908.

Bill black, base yellow ; feet bright yellow ; iris carmine ; orbit yellow.

I met with a large colony of these birds on the shores of Lake Young, but did not observe them elsewhere.

65. NYCTICORAX LEUCONOTUS.

Nycticorax leuconotus (Wagl.) ; Neave, loc. cit. p. 19.

I never met with any other example than that recorded in the paper cited.

66. BUTORIDES ATRICAPILLA.

Butorides atricapilla (Afzel.) ; Neave, loc. cit. p. 19.

This bird is very common on the banks of the Luangwa River. I did not observe it anywhere on the High Plateau.

67. ERYTHROCNUS RUFIVENTRIS.

Erythrocnus rufiventris (Sundev.) ; Neave, loc. cit. p. 20.

No. 498. ♂. Chambezi Valley, 4000 ft., April 16, 1908.

Bill—the proximal half flesh-coloured, the distal black ; feet pinkish flesh-coloured, claws horn-coloured ; iris deep yellow ; orbit yellowish.

Nos. 775, 776. ♀ ♀. E. of L. Bangweolo, 4000 ft., Oct. 15, 1908.

(775) Bill dusky, lower mandible, the basal two-thirds yellow, base of both mandibles and around eye greenish

yellow; feet and tarsi dull yellow, upper surface of toes shaded with dull brown.

(776) Upper mandible dusky, lower yellowish horn-coloured, tipped with dusky; above nostrils and around eyes bright yellow; feet and tarsi dull yellow.

A common inhabitant of swamps in the Bangweolo district.

68. ARDEOLA RALLOIDES.

Ardeola ralloides (Scop.); Neave, loc. cit. p. 20.

No. 592. ♂. L. Bangweolo, July 4, 1908.

Bill dusky above, greenish below; feet greenish yellow; iris yellow, skin around eye yellow.

Very common in the Bangweolo district and other suitable places. It is usually solitary, but sometimes met with in flocks. It is called "Mandogagwa" on L. Bangweolo.

69. ARDEIRALLUS STURMI.

Ardeirallus sturmi (Wagl.); Neave, loc. cit. p. 21.

Fam. PHŒNICOPTERIDÆ.

70. PHŒNICOPTERUS sp. inc.

I never met with Flamingos in the interior. There are, however, always flocks to be seen on the Lower Zambezi and on the seashore at Chinde.

Fam. ANATIDÆ.

71. PLECTROPTERUS GAMBENSIS.

Plectropterus gambensis (L.); Reich. loc. cit. vol. i. p. 134.

No. 819. ♂. Mansya R., L. Young, Nov. 3, 1908.

Bill dull red, both mandibles tipped with whitish; bare skin on face and orbit dull red; feet dirty flesh-coloured; iris hazel.

Not uncommon on the open plains. It is wary and not often to be obtained with a shot-gun.

72. SARCIDIORNIS MELANONOTA.

Sarcidiornis melanonota (Penn.) ; Neave, loc. cit. p. 21.

No. 781. ♂ breeding. E. shore of L. Bangweolo, Oct. 17, 1908.

Bill dusky, the tips greyish ; feet dark slate-coloured ; iris dusky.

This bird occurs throughout the country, but seems nowhere very common.

73. NETTOPUS AURITUS.

Nettopus auritus (Bodd.) ; Reich. loc. cit. vol. i. p. 127.

No. 480. ♂. Upper Luangwa R., 1600 ft., March 13, 1908.

Bill bright orange tipped with dusky ; feet black ; iris dark brown.

No. 772. ♂. E. shore of L. Bangweolo, 3900 ft., Oct. 15, 1908.

Bill orange-yellow, tip of upper mandible dusky, of lower whitish ; feet black ; iris dark brown.

Common in suitable localities, in pairs or small flocks.

74. DENDROCYCNA FULVA.

Dendrocygna fulva (Gm.) ; Neave, loc. cit. p. 22.

75. ALOPOCHEN ÆGYPTIACUS.

Alopochen ægyptiacus (L.) ; Neave, loc. cit. p. 21.

Common on all the rivers, usually in pairs.

76. ANAS UNDULATA.

Anas undulata (Dubois) ; Reich. loc. cit. vol. i. p. 113.

No. 745. ♀. Machinga Plateau, Kalungwisi district, 4200 ft., Sept. 20, 1908.

Bill orange-yellow, middle of culmen and tip black ; feet very dark brown ; iris dark brown.

This Duck does not seem to be very common in this part of Africa. A few flocks were seen in the Bangweolo and Kalungwisi district.

77. NETTIUM PUNCTATUM.

Nettium punctatum (Burchell) ; Neave, loc. cit. p. 22.

Not uncommon on lagoons in the Luangwa Valley, but not met with on the High Plateau.

78. PŒCILONETTA ERYTHRORHYNCHA.

Pœcilonetta erythrorhyncha (Gmel.); Reich. loc. cit. vol. i. p. 118.

No. 435. ♂. Upper Lufira R., 4900 ft., Nov. 21, 1907.

Bill amethyst-pink, with a dirty brown stripe on culmen; feet dirty greyish; iris reddish brown.

Widely distributed, but nowhere very common.

79. AYTHYIA ERYTHROPHTHALMA.

Aythya erythrophthalma (Wied); Sharpe, Hand-l. Birds, vol. i. p. 223.

Nyroca capensis Reich. loc. cit. vol. i. p. 108.

No. 782. ♂. E. shore of L. Bangweolo, Oct. 17, 1908.

Bill bluish grey, the tip black; feet dusky, paler on the anterior surface; iris orange, outwardly margined with scarlet.

This bird seems rare in the country traversed. This specimen was shot from among a flock of *Anas undulata*. Native name "Choso."

Fam. PHALACROCORACIDÆ.

80. PHALACROCORAX AFRICANUS.

Phalacrocorax africanus (Gm.); Neave, loc. cit. p. 23.

No. 591. ♀. L. Bangweolo, July 4, 1908.

Bill—ridge dark olive-brown, remainder orange-yellow; feet black; iris bright crimson.

Very abundant everywhere in suitable localities. It prefers rivers with wooded banks. It is called "Munondwe" by the natives of Lake Bangweolo.

Fam. PLOTIDÆ.

81. PLOTUS RUFUS.

Plotus rufus (Daud.); Grant, Cat. B. Brit. Mus. xxvi. p. 412.

Anhinga rufa Reich. loc. cit. vol. i. p. 95.

Nos. 786, 787. ♂♂. Junction of Luansenshi and Chambezi Rivers, Oct. 22, 1908.

Bill olive-brownish, lower mandible yellowish; feet dusky; iris orange-yellow; orbit yellowish.

A very abundant bird on the shores of L. Bangweolo and the river-banks in the neighbourhood. It is usually very tame, and immense numbers are often to be seen crowded together on the bushes by the water-side. Native name "Nondo."

Fam. SERPENTARIIDÆ.

82. SERPENTARIUS SECRETARIUS.

Serpentarius secretarius (Miller); Reich. loc. cit. vol. i. p. 528.

I only saw this remarkable bird on one occasion, and that was on a large open plain in the Kalungwisi district, in September 1908.

Fam. VULTURIDÆ.

83. NECROSYRTES PILEATUS.

Necrosyrtes pileatus (Burchell); Sharpe, Hand-l. Birds, vol. i. p. 243.

No serious attempts were made to collect Vultures. They seem, strange to say, to be entirely absent from a large part of the High Plateau country. This species seems to be the commonest, occurring in the Luangwa Valley in fair numbers.

Fam. FALCONIDÆ.

84. ASTUR POLYZONOIDES.

Astur polyzonoides (Smith); Neave, loc. cit. p. 23.

No. 448. ♂. Near Serenje, N. E. R., 4500 ft., Dec. 18, 1907.

Bill blue-black; cere and gape yellow; claws black; iris pale greenish yellow.

No. 463. ♀. Petauke, Luangwa Valley, 2400 ft., Jan. 11, 1908

Bill black; cere and gape yellow; feet yellow, claws black; iris scarlet.

No. 719. ♀. Kalungwisi R., Sept. 11, 1908.

Bill black; cere and gape yellow; feet orange-yellow; iris orange-scarlet.

This species seems to be the commonest of the smaller birds-of-prey over a wide area.

85. ACCIPITER OVAMPENSIS.

Accipiter ovampensis (Gurney); Neave, loc. cit. p. 24.

86. ACCIPITER MINULLUS.

Accipiter minullus (Daud.); Neave, loc. cit. p. 24.

No. 285. ♀. Bunkeya R., 3000 ft., July 25, 1907.

Bill black; cere and orbit sulphur-yellow; feet yellow; iris orange-yellow.

87. ACCIPITER RUFIVENTRIS.

Accipiter rufiventris (Smith); Reich. loc. cit. vol. i. p. 560.

No. 267. ♂ juv. Kambove, 4500 ft., July 3, 1907.

Bill dusky, base paler; cere and gape orange, somewhat dusky above; feet and tarsi orange, claws black; iris cinnamon-brown.

88. BUTEO DESERTORUM.

Buteo desertorum (Daud.); Reich. loc. cit. vol. i. p. 594.

No. 806. ♂. L. Young, Nov. 1, 1908.

Bill black, cere and gape pale yellow; feet yellow, claws black; iris brown.

89. AQUILA WAHLBERGI.

Aquila wahlbergi Sund.; Sharpe, Hand-l. Birds, vol. i. p. 261.

Hieraëtus wahlbergi Reich. loc. cit. vol. i. p. 581.

No. 96. ♂ juv. Dikulwe R., 4000 ft., March 17, 1907.

Bill blue-black, cere and gape yellow; feet yellow, claws black; iris brown.

90. LOPHOAËTUS OCCIPITALIS.

Lophoaëtus occipitalis (Daud.); Reich. loc. cit. vol. i. p. 582.

This bird occurs sparingly over a wide area. I never saw it otherwise than singly. It was specially common in the Lualaba Valley in April and May 1907.

91. Asturinula monogrammica.

Asturinula monogrammica (Temm.); Neave, loc. cit. p. 24.

No. 566. ♀. Edge of Chimpeti Plateau, Luwinga district, June 12, 1908.

Bill dusky, base and cere salmon-orange; feet red; iris deep reddish brown.

This is a common species. It seems to kill not a few snakes, as on more than one occasion when I have disturbed it, it has flown off with a snake in its talons.

92. Circaëtus cinerascens.

Circaëtus cinerascens v. Müll.; Reich. loc. cit. p. 573.

No. 289. ♀ ad. Bunkeya R., 3000 ft., July 26, 1907.

Bill black, base of both mandibles, gape, and cere yellow; feet yellow, claws black; iris very pale yellow.

93. Helotarsus ecaudatus.

Helotarsus ecaudatus (Daud.); Neave, loc. cit. p. 25.

The Bateleur is by far the commonest species of Eagle throughout the country.

94. Haliaëtus vocifer.

Haliaëtus vocifer (Daud.); Reich. loc. cit. vol. i. p. 385.

No. 537. ♀ ad. Chambezi R., May 17, 1908.

Bill blackish, base, cere, and orbit yellow; feet pale yellowish white; iris hazel-brown.

This handsome bird is common on most of the rivers throughout the country. It is fairly tame, and its cheerful screams are frequently to be heard throughout the day in these localities.

95. Gypohierax angolensis.

Gypohierax angolensis (Gmel.); Reich. loc. cit. vol. i. p. 603.

I observed this bird on two occasions, once in May 1907 on the Lualaba R., and again on the shores of L. Young in November 1908. I found it rather shy.

96. Milvus ægyptius.

Milvus ægyptius (Gm.); Neave, loc. cit. p. 25.

No. 307. ♂. Bunkeya R., 3000 ft., Aug. 3, 1907.

Bill and cere yellow; feet yellow, claws black; iris reddish brown.

These Kites are so common as to be a considerable nuisance in camp. They seem only to be present in the country from about the beginning of August to the end of March. When on the Upper Lufupa R., in September 1907, I saw many hundreds of these birds together, apparently on their southward spring migration.

97. Falco biarmicus.

Falco biarmicus (Temm.); Neave, loc. cit. p. 26.

No. 501. ♀. Chambezi Valley, 4000 ft., April 17, 1908.

Bill—tip bluish dusky, base yellowish white: gape, cere, and orbit pale yellow; feet yellow, claws black; iris dark brown.

This bird is not very rare. It occurs singly or in pairs and has an extremely swift flight.

98. Falco subbuteo.

Falco subbuteo (L.); Neave, loc. cit. p. 26.

99. Cenchris naumanni.

Cenchris naumanni (Fleisch.); Reich. loc. cit. vol. i. p. 644.

No. 462. ♂ juv. Petauke, N.E. Rhodesia, 2400 ft., Jan. 11, 1908.

Bill dark bluish, tip dusky; gape and orbit yellow; feet yellow, claws whitish; iris dark brown.

100. Dissodectes dickinsoni.

Dissodectes dickinsoni (Scl.); Neave, loc. cit. p. 26.

Fam. Strigidæ.

101. Asio nisuella.

Asio nisuella (Daud.); Reich. loc. cit. vol. i. p. 659.

Nos. 495, 496. ♂ ♀. Chambezi Valley, 4000 ft., April 15, 1908.

Bill dusky, tip of lower mandible whitish; feet dusky; iris dark hazel.

No. 502. ♂. Chambezi Valley, 4000 ft., April 17, 1908.

Bill dusky; feet dusky slate-coloured; iris dark brown.

Not uncommon on large swamps and in other suitable localities. This Owl appears to be partially diurnal in its habits.

102. Bubo maculosus.

Bubo maculosus (Vieill.); Reich. loc. cit. vol. i. p. 654.

This is by no means an uncommon bird in the well-wooded districts.

103. Pisorhina capensis.

Pisorhina capensis (Smith); Reich. loc. cit. vol. i. p. 366.

No. 98. Dikulwe R., 4000 ft., March 19, 1907.

Bill dusky, paler at base; feet dirty greyish; iris sulphur-yellow.

No. 286. ♀. Bunkeya R., 3000 ft., July 26, 1907.

Bill dusky; feet dirty greyish; iris sulphur-yellow.

No. 467. ♂. Upper Luangwa Valley, 2000 ft., Feb. 21, 1907.

Bill greyish horn-coloured; feet greenish grey; iris sulphur-yellow.

This little Owl seems to be not uncommon, but easily overlooked. It appears to have a preference for rather thinly wooded hill-sides.

104. Syrnium woodfordi.

Syrnium woodfordi (Smith); Reich. loc. cit. vol. i. p. 668.

No. 766. ♀. E. of L. Bangweolo, Oct. 10, 1908.

Bill pale yellow; feet pale yellow, claws dusky; iris dusky.

This bird is not uncommon, but it is difficult to obtain specimens. It frequents patches of "msitu" and dense forest, usually on the banks of streams.

105. Strix flammea.

Strix flammea (L.); Neave. loc. cit. p. 27.

Fam. PSITTACIDÆ.

106. PŒOCEPHALUS ANGOLENSIS.

Pœocephalus angolensis (Bocage); Neave, loc. cit. p. 27.

No. 3. ♂. Kapopo-Kansanshi, N.W. Rhodesia, 4000 ft., Jan. 16, 1907.

Bill whitish; feet grey; iris dark brown.

This bird is uncommon and very shy. It is usually best to attempt to intercept it on its way to the water, towards sunset.

107. PŒOCEPHALUS MEYERI SATURATUS.

Pœocephalus saturatus Sharpe, Bull. B. O. C. xi. p. 67 (1901).

No. 91. ♂. Dikulwe R., 4000 ft., March 16, 1907.

Bill dusky horn-coloured; feet grey; iris dark brown; skin round eye black.

No. 158. ♀. S. Kaluli R., Lualaba Valley, 2500 ft., April 27, 1908.

Bill dusky grey; feet dusky grey; iris dark red.

This is the common Parrot of the country and is ubiquitous.

108. AGAPORNIS LILIANÆ.

Agapornis lilianæ (Shelley); Neave, loc. cit. p. 28.

No. 479. ♂. Upper Luangwa R., 2000 ft., March 13, 1908.

Bill rose-coloured with paler base; feet pale greyish; iris reddish brown; orbit white.

This bird, so far as my experience goes, is confined to the Luangwa Valley. It is usually met with in flocks of considerable size during the dry season, but in the wet, breaks up into pairs and family-parties.

Fam. CORACIIDÆ.

109. CORACIAS CAUDATUS.

Coracias caudatus (L.); Neave, loc. cit. p. 29.

No. 290. ♂. Bunkeya R., 3000 ft., July 27, 1907.

Bill black; feet dirty yellow; iris dark brown.

This species is usually to be found only in the river-valleys on low ground. I did not meet with it in High Plateau country.

110. CORACIAS SPATULATUS.

Coracias spatulatus (Trim.); Neave, loc. cit. p. 29.

Nos. 72, 73. ♀, ♂ juv. Kambove, 4000 ft., March 1, 1907.

Bill black; feet greenish yellow; iris dark olive-brown.

No. 118. ♂ juv. Dikulwe R., 4000 ft., March 28, 1907.

Bill black; feet dull yellow; iris yellow-brown.

Nos. 160, 161. ♂ ♀. Lualaba R., 2500 ft., May 2, 1907.

Bill black; feet greenish yellow; iris yellow-brown.

This is a common bird on the High Plateau, less so on the low ground. During the latter half of the rains it is usually in family-parties, comprising three or four young birds besides the parents.

111. CORACIAS OLIVACEICEPS.

Coracias olivaceiceps (Sharpe); Neave, loc. cit. p. 30.

No. 605. ♂. Chirui Island, L. Bangweolo, July 8, 1908.

Bill black; feet greenish yellow; iris dark brown.

This appears to be a very rare bird west of the Mchinga Escarpment. It is usually solitary.

112. EURYSTOMUS AFER.

Eurystomus afer (Lath.); Neave, loc. cit. p. 30.

No. 26. ♀. Kambove, 4500 ft., Feb. 12, 1907.

Bill yellow; feet pale greenish brown; iris brown.

This bird seems to be migratory. It appears to be present only from about September to March, when it is not uncommon.

Family ALCEDINIDÆ.

113. CERYLE RUDIS.

Ceryle rudis (L.); Neave, loc. cit. p. 31.

No. 606. ♂. L. Bangweolo, July 9, 1908.

Bill and feet black; iris dark brown.

No. 768. ♀. E. of L. Bangweolo, Oct. 12, 1908.

Bill and feet black; iris brown.

This bird occurs everywhere commonly in suitable localities.

114. CERYLE MAXIMA.

Ceryle maxima (Pall.); Reich. loc. cit. vol. ii. p. 298.

This bird is not uncommon on the rivers in both the Zambezi and Congo basins. It is very shy.

115. CORYTHORNIS CYANOSTIGMA.

Corythornis cyanostigma (Rüpp.); Neave, loc. cit. p. 31.

No. 598. ♀. L. Bangweolo, July 5, 1908.

Bill and feet coral-scarlet; iris brown.

No. 712. ♀. Kalungwisi R., Sept. 9, 1908.

Bill and feet scarlet; iris dark brown.

No. 779. ♂ juv. E. of L. Bangweolo, Oct. 17, 1908.

Bill black; feet—upper surface brownish, lower orange-red.

A common species, especially abundant on L. Bangweolo.

116. ISPIDINA NATALENSIS.

Ispidina natalensis (Smith); Reich. loc. cit. vol. ii. p. 287.

No. 798. ♀. Lulingila R., E. Bangweolo, Oct. 26, 1908.

Bill orange-scarlet; feet coral-red; iris dark brown.

This appears to be a rare bird—in fact, this was the only specimen met with.

117. HALCYON SWAINSONI.

Halcyon swainsoni (Smith); Neave, loc. cit. p. 31.

No. 739. ♀. Machinga Plateau, Kalungwisi district, 4200 ft., Sept. 19, 1908.

Bill and feet scarlet; iris dark brown.

Though widely distributed, I found this little bird nowhere common. The above-mentioned example was nesting in a deep hole in a bank at the foot of a termite mound.

118. HALCYON CHELICUTI.

Halcyon chelicutensis (Bocage); Neave, loc. cit. p. 32.

Halcyon chelicuti Reich. loc. cit. vol. ii. p. 271.

No. 19. ♀. Kambove, 4500 ft., Feb. 11, 1907.

Bill—upper mandible dusky, lower scarlet; feet and legs, anterior surface reddish dusky, posterior orange-red; iris dark brown.

This seems to be certainly the commonest of the Bush-Kingfishers in this part of Africa. It is most abundant in the Luangwa Valley.

119. HALCYON ALBIVENTRIS ORIENTALIS.

Halcyon orientalis (Peters); Neave, loc. cit. p. 32.

No. 276. ♀. Kambove, 4600 ft., July 10, 1907.

Bill dark red, tipped with dusky; feet red, toes darker; iris dark brown.

Family BUCEROTIDÆ.

120. BUCORAX CAFFER.

Bucorax caffer (Bocage); Neave, loc. cit. p. 33.

These birds are common everywhere, and their deep booming note, not unlike the distant grunt of a lion, may be frequently heard, especially in the early mornings.

121. LOPHOCEROS ERYTHRORHYNCHUS.

Lophoceros erythrorhynchus (Temm.); Neave, loc. cit. p. 35.

No. 477. ♀. Upper Luangwa Valley, 2000 ft., March 8, 1908.

Bill dull reddish, base whitish; feet black; iris ochre-yellow.

This bird, so far as my experience goes, is strictly confined to "Mopane" bush in the low ground of the Zambezi basin. It has a characteristic note, whence its native name "Kopi kopi," this sound being repeated with extreme rapidity.

122. LOPHOCEROS MELANOLEUCUS.

Lophoceros melanoleucus (Licht.); Neave, loc. cit. p. 34.

No. 102. ♂. Dikulwe R., 4000 ft., March 21, 1907.

Bill dark red, yellowish at basal edge; feet black; iris ochre-yellow.

No. 165. ♂. Lualaba R., 2500 ft., May 2, 1907.

Bill reddish; feet black; iris orange-yellow.

This bird is widely distributed, but is shy and it is rather difficult to obtain specimens.

123. LOPHOCEROS EPIRHINUS.

Lophoceros epirhinus (Sundev.); Neave, loc. cit. p. 34.

No. 326. ♀. Bunkeya R., 3500 ft., Aug. 18, 1907.

Upper mandible dark reddish at tip, casque creamy white, dusky in middle line; lower mandible dusky, reddish toward the tip, with three diagonal white lines at base; feet black; iris reddish brown.

124. LOPHOCEROS PALLIDIROSTRIS.

Lophoceros pallidirostris (Finsch & Hartl.); Reich. loc. cit. vol. ii. p. 254.

No. 252. ♀. Katanga's, Lufira R., 3700 ft., June 25, 1907.

Bill whitish horn-coloured, darker tip; feet dusky; iris brown.

No. 765. ♂. E. of L. Bangweolo, Oct. 10, 1908.

Bill whitish horn-coloured, the tip darker; feet black; iris dark brown.

125. LOPHOCEROS NEUMANNI.

Lophoceros neumanni (Reich.); Neave, loc. cit. p. 34.

126. BYCANISTES BUCCINATOR.

Bycanistes buccinator (Temm.); Neave, loc. cit. p. 35.

This bird is almost invariably to be found in dense forest in the neighbourhood of water. It is probably attracted by the number of fruit-trees in these spots.

Fam. UPUPIDÆ.

127. UPUPA AFRICANA.

Upupa africana (Bechst.); Neave, loc. cit. p. 36.

No. 250. ♀. Upper Lufira R., 3500 ft., June 24, 1907.

Bill dark brown, with paler base; feet grey; iris dark brown.

This is rather a shy bird, generally most in evidence in June and July, when the undergrowth in the woodland has just been burned.

128. IRRISOR ERYTHRORHYNCHUS.

Irrisor erythrorhynchus (Lath.); Neave, loc. cit. p. 36.

No. 113. ♂. Dikulwe R., 4000 ft., March 24, 1907.

Bill coral-red, tipped with greyish; feet coral-red; iris dark brown.

This bird is usually found in small parties. It has a loud chattering note, which is very emphatic when it is alarmed. On these occasions, before taking to flight, it commonly goes throughout a curious see-sawing motion on the bough, moving its whole body and tail in unison.

129. RHINOPOMASTUS CYANOMELAS SCHALOWI.

Rhinopomastus schalowi (Neum.); Neave, loc. cit. p. 37.

No. 100. ♂. Dikulwe R., 4000 ft., March 20, 1907.

Bill and feet black; iris dark brown.

This bird is usually found singly, though occasionally in parties. It very often forms one of the members of a bird-party.

Fam. MEROPIDÆ.

130. DICROCERCUS HIRUNDINEUS.

Dicrocercus hirundineus (Licht.): Neave, loc. cit. p. 37.

No. 172. ♂. Lualaba R., 2500 ft., May 5, 1907.

Bill black; feet dusky brownish; iris crimson.

No. 421. ♀. Lupupa R., 4000 ft., Oct. 30, 1907.

Bill black; feet dusky; iris blood-red.

No. 790. ♂. Lower Chambezi R., Oct. 24, 1908.

Bill black; feet dusky; iris red.

This bird is a woodland species. It is usually solitary, but I have sometimes seen a family-party of as many as five individuals in the wet season.

131. MELITTOPHAGUS MERIDIONALIS.

Melittophagus meridionalis (Sharpe); Neave, loc. cit. p. 37.

No. 265. ♀. Kambove, 4500 ft., July 2, 1907.

Bill black; feet dusky; iris blood-red.

No. 570. ♀. Luena, N.E. of L. Bangweolo, 4000 ft., June 17, 1908.

Bill black; feet dusky; iris red.

Usually a common species, especially in the more open country. It is less abundant in the Congo Basin, especially in Katanga.

132. MELITTOPHAGUS ALBIFRONS.

Melittophagus albifrons (Cab.); Neave, loc. cit. p. 38.

No. 214. ♀. Upper Lualaba R., 3600 ft., May 28, 1907.

Bill black; feet dusky; iris dark brown.

No. 228. ♀. Upper Lufira R., 3500 ft., June 12, 1907.

Bill black; feet dusky; iris dark brown.

This bird is a river-haunting species and is usually met with in colonies.

133. MEROPS APIASTER.

Merops apiaster (L.); Neave, loc. cit. p. 38.

This bird is very noticeable and occurs in considerable numbers every year in September and October when on its journey farther south.

134. MEROPS NATALENSIS.

Merops natalensis (Reich.); Neave, loc. cit. p. 39.

This gorgeous species is common in large colonies on the Luangwa R. and on the lower ground on the Lualaba R., but I never saw it elsewhere.

135. AEROPS BOEHMI.

Aerops boehmi Reich. loc. cit. vol. ii. p. 319.

No. 647. ♀. Lofu R., L. Tanganyika, 4000 ft., Aug. 8, 1908.

Bill black; feet dusky; iris crimson.

Nos. 666, 667, 668. ♀ ♂ ♂. Lower Lofu R., 3500 ft Aug. 15, 1908.

Bill black; feet dusky; iris crimson.

I only met with this rare Bee-eater in the Lofu Valley, south of Lake Tanganyika. It has the habits of a *Melittophagus* rather than of a *Merops*, making short flights and constantly returning to the same perch. It haunts the edges of dense forests. I never saw it hawking high in the air as do *M. apiaster* and *M. natalensis*. It is not at all shy.

Fam. CAPRIMULGIDÆ.

136. COSMETORNIS VEXILLARIUS.

Cosmetornis vexillarius (Gould); Neave, loc. cit. p. 39.

No. 410. ♂. Lufupa R., 4000 ft., Oct. 25, 1907.

Bill pinkish horn-coloured, tipped with dusky; feet pale brownish; iris dark brown.

No. 424. ♂. Lufupa R., 4000 ft., Oct. 30, 1907.

Bill brownish, tipped with dusky; feet pinkish grey, toes darker; iris dark brown.

No. 702. ♂, breeding. Kalungwisi R., Sept. 8, 1908.

Bill brownish horn-coloured; feet dark brown; iris dark brown.

137. **CAPRIMULGUS FOSSII.**

Caprimulgus fossei Hartl.; Reich. loc. cit. vol. ii. p. 365.

No. 273. ♂. Near Kambove, 4000 ft., July 6, 1907.

Bill greyish, tip dusky; feet brown; iris dark brown.

No. 287. ♂. Bunkeya R., 3500 ft., July 26, 1907.

Bill dusky brown, gape paler; feet dark brown; iris dark brown.

No. 528. ♂. Chambezi R., 4000 ft., May 8, 1908.

Bill, feet, and iris brown.

No. 530. ♀. Chambezi R., May 10, 1908.

Bill brownish; feet pale brownish grey; iris brown.

138. **CAPRIMULGUS FRÆNATUS.**

Caprimulgus frænatus (Salv.); Neave, loc. cit. p. 40.

139. **CAPRIMULGUS FERVIDUS.**

Caprimulgus fervidus Sharpe; Reich. loc. cit. vol. ii. p. 353.

No. 313. ♂. Bunkeya R., 3500 ft., Aug. 8, 1907.

Bill dark brown, somewhat paler below; feet dark brownish, tinted with pink; iris dark brown.

Fam. COLIIDÆ.

140. **COLIUS LEUCOTIS AFFINIS.**

Colius affinis Shelley; Neave, loc. cit. p. 40.

Nos. 309, 310. ♂ ♀. Bunkeya R., 3500 ft., Aug. 6, 7, 1907.

Bill black, with a white median patch above and below in middle line; feet red, claws black; iris—upper third greenish yellow, lower two-thirds brown; bare skin round eye dark grey or (310) dusky.

No. 385. ♀. Lufupa R., 4000 ft., Oct. 3, 1907.

Bill black, with a white median patch; lower mandible—black base, white tip; feet coral-pink; iris—upper half yellow, lower brown.

This is not an uncommon bird. It is generally seen in flocks, and inhabits the bush on the banks of streams.

Fam. TROGONIDÆ.

141. HAPALODERMA NARINA.

Hapaloderma narina (Steph.); Sharpe, Hand-l. Birds, vol. ii. p. 150.

Apaloderma narina Reich. loc. cit. vol. ii. p. 212.

No. 338. ♀. Bunkeya R., 3500 ft., Aug. 30, 1907.

Bill greyish horn-coloured, gape yellowish; feet greyish brown; iris brown.

This species is not uncommon in well-wooded localities on the low ground in the Congo Basin. I never met with it on the High Plateau country or in the Luangwa Valley. It is called "Kasuku" by the natives on the Lualaba River. It is a shy and silent bird, with a remarkably noiseless flight. However frequently disturbed, it never seems to fly more than about thirty yards at a time.

Fam. MUSOPHAGIDÆ.

142. TURACUS LIVINGSTONII MARUNGENSIS.

Turacus livingstonii marungensis Reich. loc. cit. vol. ii. p. 52.

Turacus livingstonii Neave, loc. cit. p. 41.

No. 685. ♂. Upper Lofu Valley, near L. Tanganyika, Aug. 26, 1908.

Bill dull red; feet black; iris brown; orbit scarlet.

This was the only specimen of this form of Touraco that I met with in the High Plateau.

143. GALLIREX CHLOROCHLAMYS.

Gallirex chlorochlamys (Shelley); Neave, loc. cit. p. 42.

I did not meet with this bird outside of the basin of the Luangwa Valley.

144. MUSOPHAGA ROSSÆ.

Musophaga rossæ Gould; Neave, loc. cit. p. 42.

No. 278. ♂. Kambove, 4500 ft., July 10, 1907.

Bill—upper mandible and bare skin on face bright yellow, with a median patch of orange, lower mandible reddish; feet black; iris dark brown.

No. 468. ♂. Between Lubudi and Lufupa Rivers, 4000 ft., Oct. 23, 1907.

Bill and skin on face bright yellow, base of lower mandible reddish: base of shield in the middle line orange.

This is a common bird west of the Mchinga Escarpment and throughout the Congo basin. It does not occur in the Luangwa Valley.

145. SCHIZORHIS CONCOLOR.

Schizorhis concolor (Smith); Neave, loc. cit. p. 43.

This species occurs over a wide area, but is local, being usually found only in low-lying river-valleys.

Fam. CUCULIDÆ.

146. COCCYSTES GLANDARIUS.

Coccystes glandarius (L.); Neave, loc. cit. p. 43.

147. COCCYSTES JACOBINUS.

Coccystes jacobinus (Bodd.); Neave, loc. cit. p. 44.

148. COCCYSTES CAFER.

Coccystes cafer (Licht.); Neave, loc. cit. p. 44.

These birds are to be met with every year about November and December on their southward migration. *C. jacobinus* is much the commonest of the three species, and some of them seem to remain in these latitudes throughout the summer.

149. PACHYCOCCYX VALIDUS.

Pachycoccyx validus Reich. loc. cit. vol. ii. p. 83.

No. 365. ♀. Mpandi R., Dikulwe Valley, 3600 ft., Sept. 22, 1907.

Bill dusky, base and gape yellow; feet yellow; iris brown, orbit yellow.

The only specimen observed of this rare bird.

150. CUCULUS CANORUS.

Cuculus canorus (L.); Neave, loc. cit. p. 45.

No. 213. ♂. Upper Lualaba R., 3600 ft., May 27, 1907.

Bill orange-yellow, anterior half of upper and tip of lower mandible black; feet yellow; iris brown; orbit sulphur-yellow.

151. CUCULUS SOLITARIUS.

Cuculus solitarius (Stephens); Neave, loc. cit. p. 45.

This Cuckoo appears pretty common during the summer months.

152. CUCULUS CLAMOSUS.

Cuculus clamosus (Lath.); Neave, loc. cit. p. 44.

The striking three-syllabled note of this species begins to be heard everywhere about September and October, but the bird itself is not very often seen.

153. METALLOCOCCYX SMARAGDINEUS.

Metallococcyx smaragdineus (Swains.); Neave, loc. cit. p. 45.

154. CHRYSOCOCCYX CUPREUS.

Chrysococcyx cupreus (Bodd.); Neave, loc. cit. p. 46.

This is a by no means uncommon bird in the winter months. It is rather shy.

155. CENTROPUS NIGRORUFUS.

Centropus nigrorufus (Cuvier); Reich. loc. cit. vol. ii. p. 71.

No. 507. ♂. Chambezi Valley, 4000 ft., April 18, 1908.

Bill and feet black; iris purplish brown.

I found this a very rare bird—in fact, I only met with it on one occasion, where I found a few individuals on the borders of the large Nashinga swamp in the mid-Chambezi Valley.

156. CENTROPUS BURCHELLI.

Centropus burchelli (Swains.); Neave, loc. cit. p. 46.

I never met with this species outside the Luangwa Valley.

157. CENTROPUS SUPERCILIOSUS.

Centropus superciliosus (Hempr. & Ehrenb.); Neave, loc. cit. p. 47.

No. 297. ♂. Bunkeya R., 3000 ft., July 31, 1907.

Bill black; feet slate-coloured; iris blood-red.

No. 302. ♀. Bunkeya R., July 31, 1907.

Bill black, lower mandible bluish horn-coloured; feet slate; iris red.

No. 362. ♀. Bunkeya R., Sept. 10, 1907.

Bill black; feet dark slate-coloured; iris blood-red.

No. 671. ♀. Lofu R., L. Tanganyika, Aug. 16, 1908.

Bill black, base of lower mandible blue-grey; feet slate-coloured.

No. 585. ♀. Chishi Island, L. Bangweolo, June 24, 1908.

Bill black; feet dark slate-coloured; iris red.

This bird is common everywhere in suitable localities.

Fam. INDICATORIDÆ.

158. INDICATOR INDICATOR.

Indicator indicator (Gm.); Neave, loc. cit. p. 47.

No. 126. ♀. Dikulwe R., 4000 ft., March 31, 1907.

Bill dusky brown, tip paler; feet dusky brown; iris yellow-brown.

No. 170. ♂. Lualaba R., 2500 ft., May 5, 1907.

Bill pinkish, deeper in colour at base, tip of upper mandible slightly dusky; feet dark grey; iris brown.

No. 764. ♂. E. of L. Bangweolo, Oct. 10, 1908.

Bill pinkish flesh-coloured, gape and nostrils purplish; feet dusky; iris brown.

This is a very common bird, so much so that it becomes sometimes a positive nuisance. On several occasions when following elephant or important game I have had to detail natives to follow it in order to put an end to its noisy importunities.

159. INDICATOR MAJOR.

Indicator major Steph.: Reich. loc. cit. vol. ii. p. 106.

No. 521. ♀. Chambezi R., 4000 ft., May 5, 1908.

Bill dusky brown; feet dark slate-coloured; iris olive-brown; skin round eye dark slate-coloured.

No. 522. ♂. Chambezi R., May 5, 1908.

Bill very dark brown; feet blackish; iris olive-brown; skin round eye dark slate-coloured.

This would appear to be a rare bird in this part of Africa, as I only met with one pair, which were shot in some dense forest. I cannot agree with Capt. Boyd Alexander's opinion* that this species is an immature stage of *I. indicator*.

160. INDICATOR VARIEGATUS.

Indicator variegatus (Less.); Neave, loc. cit. p. 48.

161. PRODOTISCUS REGULUS.

Prodotiscus regulus Sundev.; Reich. loc. cit. vol. ii. p. 114.

No. 646. ♂. Lofu R., near L. Tanganyika, Aug. 7, 1908.

Bill and feet dusky; iris brown.

This was the only specimen of this rare bird that I met with. It did not appear to have the habits of its Honey-Guide cousins.

Fam. CAPITONIDÆ.

162. LYBIUS MACCLOUNI.

Lybius macclouni (Shelley); Neave, loc. cit. p. 48.

No. 52. ♀. Kambove, 4500 ft., Feb. 22, 1907.

Bill whitish; feet dirty flesh-coloured; iris cinnamon-brown.

No. 103. ♀. Dikulwe R., 4000 ft., March 21, 1907.

Bill whitish; feet purplish pink; iris blood-red.

No. 580. ♀. N. shore of L. Bangweolo, Jan. 22, 1908.

Bill white; feet pinkish brown; iris orange-red.

No. 689. ♀. Lofu Valley, L. Tanganyika, Aug. 26, 1908.

Bill whitish; feet flesh-pink; iris cinnamon-red.

This bird is common everywhere, except that it is apparently absent from the Luangwa Valley. It usually occurs in pairs and is nearly always found in the bush on the banks of streams. It is very tame and rather inquisitive.

163. LYBIUS TORQUATUS.

Lybius torquatus (Dumont); Neave, loc. cit. p. 48.

164. LYBIUS TORQUATUS CONGICUS.

Lybius torquatus congicus Reich. loc. cit. vol. ii. p. 126.

No. 109. ♂. Dikulwe R., 3500 ft., March 23, 1907.

Bill black; feet dusky; iris very dark brown.

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* Bull. B. O. C. xxi. p. 91 (1908).

No. 120. ♂. Dikulwe R., 3500 ft., March 29, 1907.

Bill black; feet dusky; iris red-brown.

Birds from this side of the watershed appear to belong to this race, as compared with typical *L. torquatus* in the Luangwa Valley.

165. BARBATULA EXTONI.

Barbatula extoni Layard; Reich. loc. cit. vol. ii. p. 150.

No. 143. ♂. S. Kaluli R., Lualaba Valley, 3000 ft., April 18, 1907.

Bill black; feet dusky brown; iris reddish brown.

No. 272. ♀. Kambove, 4500 ft., July 4, 1907.

Bill black; feet dusky brown; iris dark brown.

No. 443. ♂. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 17, 1907.

Bill and feet black; iris dark brown.

No. 523. ♂. Chambezi R., 3500 ft., May 6, 1908.

Bill black; feet dusky; iris dark brown.

No. 785. ♀. E. of L. Bangweolo, Oct. 20, 1908.

Bill black; feet dusky; iris dark brown.

No. 803. ♂. Valley of Mansya R., Mpika Plateau, Oct. 29, 1908.

Bill and feet dusky; iris brown.

This little bird is not uncommon in wooded country. It sometimes occurs in family-parties of about five individuals, though usually singly. A single bird is sometimes seen amongst a "bird-party."

166. STACTOLÆMA ANCHIETÆ.

Stactolæma anchietæ (Boc.); Sharpe, Hand-l. Birds, vol. ii. p. 182.

Buccanodon anchietæ Reich. loc. cit. vol. ii. p. 141.

No. 147. ♂. S. Kaluli R., Lualaba R., April 20, 1907.

Bill and feet black; iris dusky.

No. 221. ♂. Upper Lualaba R., May 30, 1907.

Bill and feet black; iris dark brown.

I observed this bird only in the Lualaba Valley.

167. TRACHYPHONUS CAFER.

Trachyphonus cafer (Vieill.); Neave, loc. cit. p. 49.

No. 9. ♂. Kambove, 4500 ft., Feb. 5, 1907.

Bill pale greenish yellow, tip dusky; feet dusky; iris reddish brown.

A fairly common bird, which is more often heard than seen.

Fam. PICIDÆ.

168. DENDROMUS FUELLEBORNI.

Dendromus fülleborni (Neum.); Neave, loc. cit. p. 49.

No. 234. ♂. Upper Lufira R., 3600 ft., June 14, 1907.

Bill dusky, lower mandible slightly paler; feet greenish grey; iris dark brown.

169. DENDROMUS SMITHI.

Dendromus smithi (Malh.); Reich. loc. cit. vol. ii. p. 176.

No. 536. ♂. Chambezi R., May 16, 1908.

Bill blackish; feet dull greenish; iris pale amethyst-pink.

No. 748. ♂. Edge of Chimpili Plateau, N. of L. Bangweolo, Sept. 24, 1908.

Bill dull slate-coloured, somewhat paler below; feet greenish grey; iris pale claret.

170. DENDROMUS BENNETTI.

Dendromus bennetti (Smith); Neave, loc. cit. p. 50.

Nos. 27, 28. ♀ ♀. Kambove, 4500 ft., Feb. 13, 1907.

Bill greenish dusky; feet greenish grey; iris brownish magenta.

No. 53. ♀. Kambove, 4500 ft., Feb. 23, 1907.

Bill greyish; feet greenish grey; iris red.

No. 114. ♂. Dikulwe R., 4000 ft., March 24, 1907.

Bill dusky horn-coloured; feet greenish grey; iris amethyst-pink.

171. DENDROPICUS HARTLAUBI.

Dendropicus hartlaubi (Malh.); Neave, loc. cit. p. 50.

No. 116. ♂. Dikulwe R., 3500 ft., March 26, 1907.

Bill dusky horn-coloured; feet greenish grey; iris dark red.

No. 253. ♀. Upper Lufira R., 3600 ft., June 25, 1907.

Bill dark grey; feet olive-grey; iris dark red.

No. 456. Juv. Near Serenje, N.E. Rhodesia, Dec. 20, 1907.

Bill dusky grey: feet greenish: iris reddish brown.

No. 490. ♂. Upper Luangwa R., 3000 ft., March 29, 1908.

Bill dark grey; feet greenish grey; iris dull red.

No. 642. ♀. Lofu R., Tanganyika Plateau, 4000 ft., Aug. 6, 1908.

Bill dark grey; feet greenish; iris dull red.

No. 762. ♂. E. of L. Bangweolo, Oct. 9, 1908.

Bill dusky; feet greenish grey; iris dull red.

172. THRIPIAS NAMAQUUS.

Thripias namaquus (Licht.); Neave, loc. cit. p. 50.

173. MESOPICUS RUWENZORI.

Mesopicus ruwenzori Sharpe, Bull. B. O. C. xiii. p. 8 (1902).

No. 280. ♀. Kambove, 4500 ft., July 11, 1907.

Bill dusky, base of lower mandible blue-grey: feet dark grey; iris dark brown.

No. 348. ♀. Bunkeya R., 3500 ft., Aug. 31, 1907.

Bill dusky, base of lower mandible blue-grey: feet greenish grey; iris brown.

This bird, so far as my experience goes, differs from other Woodpeckers in its preference for patches of dense forest. It is rather shy.

Fam. HIRUNDINIDÆ.

174. CHELIDON URBICA.

Chelidonaria urbica (L.); Neave, loc. cit. p. 51.

I again saw a very large number of these birds, apparently on migration, on the Upper Lufira River, on November 24, 1907. This date is therefore thirteen days later and the locality some three hundred miles north-west of the observation made on the first expedition (*loc. cit.* p. 51).

175. HIRUNDO RUSTICA.

Hirundo rustica L.; Reich. loc. cit. vol. ii. p. 406.

No. 150. Mazanguli, Lualaba Valley, 2600 ft., April 24, 1907.

Bill and feet black; iris dusky.

No. 409. ♂. Between Lubudi and Lufupa Rivers, Oct. 23, 1907.

Bill black, gape yellow; feet dusky brown; iris dark brown.

The European Swallow seems to be uncommon, and both these individuals, I am inclined to think, were on migration.

176. HIRUNDO DIMIDIATA.

Hirundo dimidiata Sund.: Reich. loc. cit. vol. ii. p. 403.

No. 10. Juv. Kambove, 4500 ft., Feb. 6, 1907.

Bill and feet black; iris dark brown.

Judging by the season and the fact that this is a young bird, this species, which is uncommon in my experience, appears to breed here.

177. HIRUNDO GRISEOPYGA.

Hirundo griseopyga Sundev.; Neave, loc. cit. p. 51.

No. 519. ♂. Chambezi Valley, 4000 ft., April 23, 1908.

Bill and feet black; iris dusky brown.

No. 813. ♀? Mansya R., L. Young, Nov. 2, 1908.

Bill and feet dusky; iris brown.

This Swallow is usually seen hawking after insects in open parts of the country.

178. HIRUNDO PUELLA.

Hirundo puella Temm. & Schl.; Neave, loc. cit. p. 52.

No. 179. Busanga, Lualaba R., 2800 ft., May 10, 1907.

Bill and feet black; iris dark brown.

No. 359. Bunkeya R., 3000 ft., Aug. 7, 1907.

Bill black; feet dusky; iris dark brown.

No. 699. Kalungwisi R., Sept. 7, 1908.

Bill and feet black; iris brown.

This species is nearly always found on the banks of streams. I did not meet with it far from water.

179. HIRUNDO MONTEIRI.

Hirundo monteiri Hart.; Neave, loc. cit. p. 52.

No. 34. ♂. Kambove, 4500 ft., Feb. 15, 1907.

Bill and feet black; iris very dark brown.

No. 361. ♂. Bunkeya R., 3000 ft., Sept. 8, 1907.

Bill black; feet dusky; iris dark brown.

No. 581. ♂. N. shore of L. Bangweolo, June 22, 1908.

Bill and feet black; iris dark brown.

180. CLIVICOLA CINCTA.

Clivicola cincta (Bodd.); Sharpe, Hand-l. Birds, vol. iii. p. 189.

Riparia cincta Reich. loc. cit. vol. ii. p. 394.

No. 7. ♂. Kansanshi, N.W. Rhodesia, 1600 ft., Jan. 28, 1907.

Bill and feet black; iris dark brown.

Fam. MUSCICAPIDÆ.

181. ALSEONAX SUBADUSTA.

Alseonax subadusta Shelley; Neave, loc. cit. p. 52.

No. 180. ♀. Busanga, Lualaba R., 2800 ft., May 10, 1907.

Bill dark brown; feet dusky-brown; iris dark brown.

No. 251. ♀. Katanga's, Lufira R., 3700 ft., June 24, 1907.

Bill brown, base of lower mandible yellow; feet dusky; iris brown.

No. 279. ♀. Kambove, 4500 ft., July 10, 1907.

Bill dusky, lower mandible yellowish tipped with dusky; feet dusky; iris dark brown.

No. 567. ♀. Edge of Chimpili Plateau, N. of L. Bangweolo, June 13, 1908.

Bill dusky, base of lower mandible and gape yellowish; feet dark brown; iris brown.

No. 698. ♀. Kalungwisi Valley, Sept. 5, 1908.

Bill dusky, base of lower mandible yellowish; feet dusky; iris dark brown.

This little bird is not uncommon in the woodland, but is often overlooked on account of its small size and inconspicuous appearance. It is sometimes one of the members of a "bird party."

182. ALSEONAX INFULATA.

Alseonax infulata (Hart.): Reich. loc. cit. vol. ii. p. 457.

No. 597. ♀. Lake Bangweolo, July 5, 1908.

Bill and feet black; iris brown.

This was one of a pair of birds seen among the reeds in a lagoon forming part of L. Bangweolo and quite a mile from dry land. It was not observed elsewhere.

183. ALSEONAX MELANOPTERA.

Alseonax melanoptera Jackson, Bull. B. O. C. xvi. p. 88 (1906).

No. 725. Kalungwisi R., Sept. 15, 1908.

Bill black; feet dark brown; iris dark brown.

It seems doubtful whether this bird is really distinct from *A. lugens* (Hartl.).

184. MELÆNORNIS ATER.

Melænornis ater (Sund.); Neave, loc. cit. p. 53.

No. 101. ♂. Dikulwe R., 4000 ft., March 20, 1907.

Bill and feet black; iris brown.

This bird is not uncommon in woodland country. It has a habit of sitting at the top of a tall tree.

185. BRADYORNIS MURINUS.

Bradyornis murinus Finsch & Hartl.; Neave, loc. cit. p. 53.

No. 157. ♂. Kaluli R., Lualaba Valley, 2500 ft., April 27, 1907.

Bill and feet dusky brown; iris dark brown.

No. 590. ♂. West coast of Lake Bangweolo, July 1, 1908.

Bill dusky; feet dark brown; iris brown.

This bird is rather wary for a Flycatcher. It frequents the bushes in open spaces and clearings, such as native gardens.

186. BRADYORNIS GRISEUS.

Bradyornis griseus Reich. J. f. O. 1882, p. 211.

Bradornis griseus Reich. loc. cit. vol. ii. p. 438.

No. 527. ♀. Chambezi R., 4000 ft., May 7, 1908.

Bill dark brown; feet black; iris dark brown.

No. 723. ♂. Kalungwisi R., Sept. 14, 1908.

Bill and feet black; iris brown.

This bird, which is distinguished from *B. murinus* by its smaller size, frequents somewhat denser bush and is not uncommon.

187. MUSCICAPA GRISOLA.

Muscicapa grisola L.; Neave, loc. cit. p. 53.

No. 48. ♂. Kambove, 4500 ft., Feb. 22, 1907.

Bill horn-brown; feet dusky; iris dark brown.

No. 486. ♀. Upper Luangwa Valley, 3000 ft., March 28, 1908.

Bill dusky horn-coloured, base of lower mandible paler; feet dusky; iris dark brown.

188. MUSCICAPA CÆRULESCENS.

Muscicapa cærulescens (Hartl.); Neave, loc. cit. p. 54.

No. 107. ♀. Dikulwe, 4000 ft., March 23, 1907.

Bill black, lower mandible blue-grey tipped with dusky; feet dusky; iris brown.

No. 162. ♂. Lualaba R., 2500 ft., May 2, 1907.

Bill dusky, blue-grey below; feet dusky; iris dark brown.

No. 283. ♀. Lukafu, 3000 ft., July 22, 1907.

Bill black, blue-grey below; feet dusky grey; iris dark brown.

No. 342. Bunkeya R., 3000 ft., Aug. 31, 1907.

Bill dusky, lower mandible blue-grey tipped dusky; feet dusky brown; iris brown.

No. 426. ♂. Lufupa R., 4000 ft., Oct. 31, 1907.

Bill dusky, lower mandible bluish grey; feet olive-brown; iris dark brown.

No. 632. ♂. Upper Kalungwisi Valley, July 29, 1908.

Bill dusky, lower mandible bluish grey; feet black; iris brown.

No. 665. ♀. Lofu R., L. Tanganyika, Aug. 14, 1908.

Bill dusky, base of lower mandible greyish; feet very dark brown; iris brown.

A common species, especially in thick bush or forest on the banks of streams.

189. Hyliota australis.

Hyliota australis Shelley; Reich. loc. cit. vol. ii. p. 474.

No. 17. ♂? Kambove, 4500 ft., Feb. 10, 1907.

Bill black, bluish grey at base of lower mandible; feet blackish; iris dark brown.

No. 20. ♀. Kambove, Feb. 11, 1907.

Bill dusky, bluish horn-coloured below; feet bluish dusky; iris dark brown.

No. 65. Juv. Kambove, Feb. 28, 1907.

Bill black, blue-grey below; feet black; iris dark brown.

No. 138. ♂. Dikulwe R., 4000 ft., April 3, 1907.

Bill black, blue-grey below; feet dusky grey; iris dark brown.

No. 551. ♂. Upper Luansenshi R., N.E. of L. Bangweolo, June 4, 1908.

Bill black above, bluish grey below; feet black; iris brown.

No. 562. ♀ juv. Edge of Chimpili Plateau, June 10, 1908.

Bill dusky, base of lower mandible blue-grey; feet dusky; iris brown.

This little bird is not uncommon in the woodland country west of the Mchinga Escarpment. It is usually solitary, but is occasionally seen in family-parties of five or six individuals.

190. Parisoma plumbeum.

Parisoma plumbeum (Hartl.); Reich. loc. cit. vol. iii. p. 521.

No. 222. ♂. Upper Lualaba R., 3800 ft., May 30, 1907.

Bill black, base of lower mandible grey; feet dusky grey; iris red.

191. Myopornis boehmi.

Myopornis boehmi (Reich.); Reich. loc. cit. vol. ii. p. 448.

No. 538. ♂. Chambezi R., May 20, 1908.

Bill blackish; feet dark bluish grey; iris dark brown.

The only specimen of this rare bird obtained was shot in the bush on the banks of the Chambezi and appeared to have much the same habits as a *Muscicapa*.

192. CHLOROPETA NATALENSIS.

Chloropeta natalensis A. Smith; Reich. loc. cit. vol. ii. p. 464.

No. 39. ♀. Kambove, 4500 ft., Feb. 17, 1907.

Bill dusky horn-coloured above, pinkish horn-coloured below; feet dusky; iris olive-brown.

No. 50. ♀, breeding. Kambove, 4500 ft., Feb. 22, 1907.

Bill dusky horn-coloured, whitish below; feet dusky greyish; iris dark brown.

No. 69. ♂. Kambove, March 1, 1907.

Bill horn-brown, pinkish horn-coloured below; feet dusky grey; iris brown.

I only met with these birds at Kambove. All of them were shot sitting on the heads of some long grasses in broken country.

193. BATIS MOLITOR.

Batis molitor (Hahn & Küster); Neave, loc. cit. p. 54.

No. 1. ♀ juv. Between Broken Hill and Kapopo, 1000 ft., Jan. 5, 1907.

Bill and feet black; iris outwardly yellowish, inwardly whitish.

No. 14. ♂ ad. Kambove, 4500 ft., Feb. 9, 1907.

Bill and feet black; iris outwardly golden brown, inwardly sulphur-yellow.

No. 163. ♂. Lualaba R., 2500 ft., May 2, 1907.

Bill and feet black; iris orange-yellow.

No. 271. ♀. Kambove, 4500 ft., July 4, 1907.

Bill and feet black; iris sulphur-yellow, becoming brown outwardly.

No. 639. ♀. Lofu R., L. Tanganyika, Aug. 4, 1908.

Bill and feet black; iris pale yellow.

No. 724. ♀. Kalungwisi R., Sept. 14, 1908.

Bill and feet black; iris sulphur-yellow.

An extremely common species in woodland country. One pair at least accompanies every bird-party.

194. Platystira jacksoni.

Platystira jacksoni Sharpe; Neave, loc. cit. p. 55.

No. 32. ♀. Kambove, 4500 ft., Feb. 15, 1907.

Bill and feet black; iris dark amethystine; wattle crimson.

No. 33. ♂. Kambove, Feb. 15, 1907.

Bill and feet black; iris dark amethystine; wattle crimson.

No. 139. ♀. Dikulwe R., 4000 ft., April 3, 1907.

Bill black; feet dusky; iris dark brown; wattle, upper scarlet, lower dusky brown.

No. 196. ♀. Upper Lualaba R., 3500 ft., May 20, 1907.

Bill black; feet dusky, legs dark purplish; iris dark brown; wattle red.

No. 556. ♀. Edge of Chimpili Plateau, N. of Bangweolo, June 9, 1908.

Bill black; feet dusky; iris brown; wattle scarlet.

No. 657. ♂. Lofu R., Aug. 10, 1908.

Bill and feet black; iris dark brown; wattle, upper scarlet, lower dark brown.

This bird is confined to dense bush and thickets near water. It is usually seen in pairs and has a peculiarly harsh grating note. It is tame and somewhat inquisitive. I only saw one individual in the Luangwa Valley, but whether it belonged to this species or to the closely allied *P. peltata* Sundev. I am unable to say.

195. Smithornis capensis.

Smithornis capensis (Smith); Neave, loc. cit. p. 55.

No. 108. ♂. Dikulwe R., 4000 ft., March 23, 1907.

Bill black, lower mandible white; feet greenish yellow; iris grey-brown.

No. 352. ♀. Bunkeya R., 3000 ft., Sept. 1, 1907.

Bill black, lower mandible white; feet pale olive-yellow; iris brown.

This bird, though not rare, is seldom seen. It frequents very dense bush on the banks of streams.

196. ERYTHROCERCUS LIVINGSTONII.

Erythrocercus livingstonei Finsch & Hartl.; Neave, loc. cit. p. 56.

This bird does not appear to pass the Mchinga Escarpment, as I never met with it elsewhere.

197. TROCHOCERCUS VIVAX. (Plate I.)

Trochocercus vivax Neave, Ann. N. H. (8) vol. iv. p. 129 (1909).

This species resembles *T. bivittatus* Reich., but has no white wing-patch. The sides of the body are ashy grey, with the breast and the abdomen white.

Total length about 6·1 inches; culmen 0·7; wing 2·75; tail 3·2; tarsus 0·75.

No. 121. ♂ juv. Dikulwe R., 4000 ft., March 29, 1907.

Bill dusky, lower mandible blue-grey; feet blue-grey; iris very dark brown.

No. 341. ♀ ad., type. Bunkeya R., 3000 ft., Aug. 30, 1907.

Bill dark blue, tip of upper mandible black; feet lead-coloured: iris dark reddish brown.

No. 353. ♂ ad., type. Bunkeya R., 3000 ft., Sept. 1, 1907.

Bill bluish horn-coloured, dusky tip; feet bluish grey; iris brown.

This bird occurs sparingly in forest on streams and river-banks. It is very active and restless, but is rather shy, and if once alarmed disappears into the densest thickets.

198. TCHITREA PLUMBEICEPS.

Tchitrea plumbeiceps (Reich.); Neave, loc. cit. p. 56.

No. 105. ♀. Dikulwe R., 4000 ft., March 23, 1907.

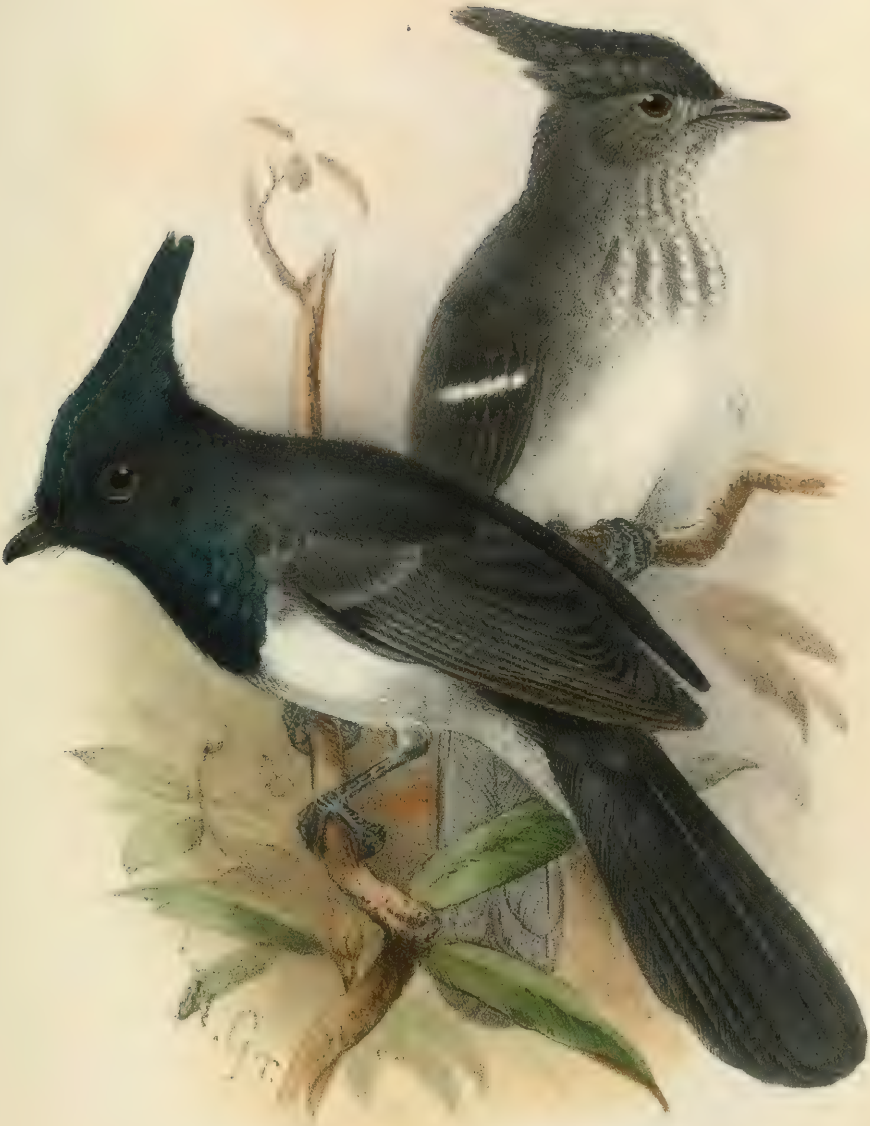
Bill dusky, bluish horn-coloured at base; feet greyish blue; iris very dark brown.

No. 336. ♂. Bunkeya R., 3000 ft., Aug. 28, 1907.

Bill blue; feet lead-coloured; iris dark brown, orbit blue.

No. 360. ♀. Bunkeya R., Sept. 8, 1907.

Bill blue, tip dusky; feet blue-grey; iris dark brown; orbit blue.



West, Newman imp.

TROCHOCERCUS VIVAX, ♂ ♀.

No. 416. ♂. Lufupa R., 4000 ft., Oct. 28, 1907.

Bill bright blue; feet dark slate-coloured; iris brown, orbit bright blue.

No. 587. ♂ juv. Chishi Island, L. Bangweolo, June 26, 1908.

Bill bluish slate-coloured, tipped with dusky; feet dark bluish slate-coloured; iris dark brown, orbit dark blue.

No. 750. ♀. Chimpili Plateau, Luwingu, Sept. 25, 1908.

Bill blue-grey; feet bluish grey; iris dark brown, orbit blue.

This species is ubiquitous in woodland country.

199. Elminia albicauda.

Elminia albicauda Boc.; Neave, loc. cit. p. 57.

No. 77. ♂. Kambove, 4500 ft., March 4, 1907.

Bill and feet black; iris brown.

No. 517. ♂. Valley of Chambezi, 4000 ft., May 2, 1908.

Bill and feet black; iris dark brown.

No. 615. ♂. Luwingu, Chimpili Plateau, July 19, 1908.

Bill and feet black; iris brown.

No. 630. ♀. Upper Kalungwisi Valley, July 29, 1908.

Bill and feet black; iris brown.

A common High Plateau species in woodland and on stream-banks. It is very tame.

Fam. CAMPOPHAGIDÆ.

200. Coracina pectoralis.

Coracina pectoralis (Jard. & Selb.); Neave, loc. cit. p. 57.

Nos. 194, 195. ♂ ♀ imm. Upper Lualaba R., 3500 ft., May 19, 1907.

Bill and feet black; iris dark brown.

No. 236. ♂. Upper Lufira R., 3500 ft., June 15, 1907.

Bill and feet black; iris dark brown.

This bird is not uncommon in woodland country, but is rather shy. On the wing it looks like a cuckoo or small hawk.

Young males appear to resemble the female in having a white throat.

201. Campophaga nigra.

Campophaga nigra (Vieill.); Neave, loc. cit. p. 58.

No. 111. ♂. Dikulwe R., 4000 ft., March 24, 1907.

Bill and feet black; gape yellow; iris brown.

No. 173. ♀. Lualaba R., 2600 ft., April 6, 1907.

Bill dusky brown; feet black; iris dark brown.

No. 233. ♀. Upper Lufira R., 3500 ft., June 13, 1907.

Bill and feet black; iris dark brown.

No. 653. ♀. Lofu Valley, Aug. 10, 1908.

Bill and feet black; iris dark brown.

No. 472. ♂. Lundazi R., Upper Luangwa Valley, March 3, 1908.

Bill black, gape bright orange; feet black; iris dark brown.

Not uncommon, but often overlooked on account of its retiring habits.

202. Campophaga quiscalina.

Campophaga quiscalina Finsch; Reich. loc. cit. vol. ii. p. 520.

No 51. ♀. Kambove, 4500 ft., Feb. 22, 1907.

Bill black; feet dusky; iris dark brown.

This specimen, which I assign with some doubt to *C. quiscalina*, was shot in a small patch of dense forest. The species was not observed elsewhere.

Fam. Pycnonotidæ.

203. Andropadus zombensis.

Andropadus zombensis Shelley; Sharpe, Hand-l. Birds, vol. iii. p. 324.

Andropadus virens zombensis Reich. loc. cit. vol. iii. p. 413.

No. 182. ♀. Junction of Lufupa and Lualaba Rivers, 2800 ft., May 11, 1907.

Bill and feet brown; iris brown.

Nos. 554, 555. ♂ ♀. Edge of Chimpili Plateau, N. o L. Bangweolo, June 8, 1908.

Bill very dark brown; feet yellowish brown; iris brown.

Nos. 558, 565. ♂ ♂. Edge of Chimpili Plateau, June 9, 11, 1908.

Bill dark brown; feet olive-brown; iris brown.

No. 681. ♂. Lofu Valley, Aug. 24, 1908.

Bill dusky; feet brown; tarsi paler; iris brown.

No. 690. ♂. Lofu Valley, Aug. 27, 1908.

Bill dark brown; feet brown; iris dark brown.

This bird is not uncommon in "msitu" and in patches of forest on stream-banks. It has a singularly sweet song.

204. ANDROPADUS OLEAGINUS.

Andropadus oleaginus Peters; Neave, loc. cit. p. 58.

This species is common in the Luangwa Valley, but seems to be absent from the High Plateau.

205. CRINIGER SYLVICULTOR.

Criniger sylvicultor Neave, Ann. N. H. (8) vol. iv. p. 130 (1909).

This bird is allied to *C. cabanisi* Sharpe, but is distinctly paler, the throat and entire breast being pale sulphur-yellow, the fore-neck olive washed with sulphur-yellow. The bill is also longer and stronger than that of *C. cabanisi*.

Total length about 7 inches; culmen 0·85; wing 3·65; tail 3·6; tarsus 1·05.

No. 46. ♂. Kambove, 4500 ft., Feb. 21, 1907.

Bill dusky horn-coloured, paler below; feet greyish tinted yellow; iris dusky.

No. 132. ♂. Dikulwe R., 4000 ft., April 1, 1907.

Bill dusky horn-coloured, paler below; feet pale greyish; iris olive-grey.

No. 340. ♂. Bunkeya R., 3000 ft., Aug. 30, 1907.

Bill dusky horn-coloured, lower mandible much paler; feet grey; iris olive-brown.

No. 363. ♀. Bunkeya R., 3000 ft., Sept. 10, 1907.

Bill brownish horn-coloured, paler below; gape yellow; feet greenish grey; iris greyish olive.

No. 557. ♀. Edge of Chimpili Plateau, N. of L. Bangweolo, June 9, 1908.

Bill brownish, paler below; feet grey; iris yellowish brown.

No. 679. ♂. Lofu Valley, L. Tanganyika, Aug. 24, 1908.

Bill dusky, paler below; feet greenish grey; iris brown.

No. 731. ♂. Kalungwisi Valley, Sept. 17, 1908.

Bill brownish horn-coloured, lower mandible paler; feet greenish slate-coloured; iris pale olive-brown.

No. 747. ♀. Machinga Plateau, Kalungwisi district, Sept. 23, 1908.

Bill greyish horn-coloured, base of lower mandible paler; feet pale slate-coloured; iris pale greyish brown.

This species of *Criniger* is not uncommon in dense forest within the Congo basin. It has a rather harsh croaking note.

206. PHYLLOSTROPHUS OCCIDENTALIS.

Phyllostrophus occidentalis (Sharpe); Reich. loc. cit. vol. iii. p. 397.

No. 153. Kaluli R., Lualaba Valley, April 27, 1907.

Bill dark greyish brown; feet slate-coloured; iris red-brown.

207. PHYLLOSTROPHUS CERVINIVENTRIS.

Phyllostrophus cerviniventris Shelley; Reich. loc. cit. vol. iii. p. 403.

No. 339. ♀. Bunkeya R., 3000 ft., Aug. 30, 1907.

Bill brownish horn-coloured, lower mandible paler, especially at base; feet flesh-coloured; iris golden brown.

No. 347. ♀. Bunkeya R., Aug. 31, 1907.

Bill brownish horn-coloured, lower mandible much paler; feet flesh-coloured; iris golden.

No. 692. ♂. Kalungwisi Valley, Sept. 3, 1908.

Bill brownish horn-coloured, base of lower mandible flesh-coloured; feet flesh-coloured; iris salmon-orange.

No. 732. ♀. Kalungwisi Valley, Sept. 17, 1908.

Bill brownish horn-coloured, base of lower mandible paler; feet flesh-coloured; iris orange.

208. PHYLLOSTROPHUS PALLIDIGULA.

Xenocicla pallidigula, Sharpe; Ibis, 1898, p. 146.

Phyllostrophus flavigula pallidigula Reich. loc. cit. vol. iii. p. 395.

No. 227. ♀. Upper Lufira R., 3500 ft., June 12, 1907.

Bill black; feet dark greyish brown; iris pale yellow-brown.

No. 259. ♀. Kambove, 4500 ft., July 1, 1907.

Bill black; feet dusky; iris yellow-brown.

No. 277. ♀. Kambove, July 10, 1907.

Bill black; feet dark grey; iris hazel.

No. 372. ♀. Plateau near Upper Lualaba R., 4000 ft., Sept. 24, 1907.

Bill black; feet dark olive-brown; iris orange-brown.

No. 384. ♂. Upper Lufupa R., 4000 ft., Oct. 3, 1907.

Bill dark brown; feet dark brown; iris yellowish brown.

No. 406. ♀. Lubudi R., 3800 ft., Oct. 19, 1907.

Bill black; feet dusky olive; iris golden brown.

No. 778. ♂. E. shore of L. Bangweolo, Oct. 16, 1908.

Bill dusky; feet dusky olive; iris ochre-yellow.

No. 802. ♀. Mansya R., Mpika Plateau, 4500 ft., Oct. 29, 1908.

Bill black; feet slate-coloured; iris yellowish brown.

A common forest species. The specimens recorded by Shelley from Zomba as *P. flavigula* should, I think, be really attributed to this species.

209. PHYLLOSTROPHUS STREPITANS.

Phyllostrophus strepitans (Reich.); Neave, loc. cit. p. 59.

No. 460. ♀. Petauke, Luangwa Valley, Jan. 10, 1908.

Bill brownish horn-coloured, paler below; feet greyish brown; iris reddish brown.

This bird is common in the Luangwa Valley, but I never met with it west of the Mchinga Escarpment.

210. PYCNONOTUS LAYARDI.

Pycnonotus layardi Gurney; Neave, loc. cit. p. 59.

No. 66. Kambove, 4500 ft., Feb. 28, 1907.

Bill and feet black; iris brown.

No. 104. ♂. Dikulwe R., 4000 ft., March 21, 1907.

Bill and feet black; iris dark brown.

No. 381. ♂. Lufupa R., 4000 ft., Oct. 2, 1907.

Bill and feet black; iris dark brown.

This species seems to be ubiquitous and always common.

Fam. TIMELIIDÆ.

211. CRATEROPUS HARTLAUBI.

Crateropus hartlaubi Bocage; Neave, loc. cit. p. 61.

No. 320. ♀. Bunkeya R., 3000 ft., Aug. 13, 1907.

Bill black; legs olive; iris bright crimson.

No. 325. ♀. Bunkeya R., Aug. 15, 1907.

Bill black; feet very dark olive; back of tarsus much paler.

No. 335. ♂. Bunkeya R., Aug. 28, 1907.

Bill black; feet dark olive-grey, legs paler; iris orange-scarlet.

No. 452. ♀. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 19, 1907.

Bill black; feet dull slate-coloured; tarsi pale greyish; iris blood-red.

No. 700. ♀. Kalungwisi R., Sept. 7, 1908.

Bill black; feet greyish horn-coloured; iris scarlet, with an inner line of orange.

This bird replaces *C. kirki* west of the Mchinga Escarpment. It is usually found on the banks of streams in rather open country and is shy.

212. CRATEROPUS KIRKI.

Crateropus kirki Sharpe; Neave, loc. cit. p. 60.

This species is not uncommon in the Luangwa Valley, but I never met with it west of the Mchinga Escarpment.

213. CRATEROPUS TANGANJICÆ.

Crateropus tanganjicæ Reich. loc. cit. vol. iii. p. 663.

No. 49. Kambove, 4500 ft., Feb. 22, 1907.

Bill black; feet greenish grey; iris orange-yellow, outwardly scarlet.

No. 58. Kambove, 4500 ft., Feb. 25, 1907.

Bill black; feet dusky grey, legs paler; iris orange, outwardly scarlet.

Nos. 216, 217. ♂ ♀. Upper Lualaba R., 3600 ft., May 30, 1907.

Bill black; feet brownish; legs brownish grey; iris orange, outwardly scarlet.

No. 317. ♂. Bunkeya R., 3000 ft., Aug. 11, 1907.

Bill black; feet dusky; iris orange, becoming outwardly scarlet.

Nos. 727, 728. ♀ ♂. Kalungwisi R., Sept. 16, 1908.

Bill black; feet greyish horn-coloured, tarsi paler; iris scarlet, with an inner line of orange.

The recently described *C. carruthersi* of Grant seems to be doubtfully distinct from this species.

C. tanganjicæ is a common bird in small parties throughout the country in the Congo basin. It has much the same habits as *C. hartlaubi.*

214. Neocichla kelleni.

Neocichla kelleni Büttik. Notes Leiden Museum, x. p. 229, pl. 9. fig. 1 (1888).

Neocichla gutturalis (partim) Reich. loc. cit. vol. iii. p. 678.

No. 470. ♀. Luangwa Valley, 2000 ft., Feb. 27, 1908.

Bill dusky horn-coloured, base and gape orange-yellow; feet brown; iris bluish grey.

I only met with this very rare bird on one occasion. I found a party of about twenty in Mopane forest. They were rather shy, and it took me nearly two hours before I could get within gunshot. In flight they much resembled *Prionops talacoma,* but they have a chattering note more like that of a *Crateropus.*

Although both Reichenow and Sharpe agree in treating this bird as the young of *N. gutturalis* Sharpe, I am a little doubtful about it, as all the examples that I saw appeared to be heavily spotted, as shown in the figure of *N. kelleni.*

Fam. Turdidæ.

215. Merula tropicalis.

Merula tropicalis (Peters); Neave, loc. cit. p. 61.

No. 61. ♂. Kambove, 4500 ft., Feb. 25, 1907.

Bill orange; feet light orange; iris dark brown; orbit orange-brown.

No. 81. ♂? Dikulwe R., 4000 ft., March 14, 1907.

Bill orange; feet pale orange-brown; iris brown, orbit orange-brown.

No. 142. ♂. Kaluli R., Lualaba Valley, 3000 ft., April 18, 1907.

Bill orange; feet pale orange-yellow; iris brown, orbit yellow.

No. 231. ♀. Upper Lufira R., 3500 ft., June 13, 1907.

Bill orange; feet yellow-brown; iris dark brown, orbit yellow-brown.

No. 445. ♂ juv. Near Serenje, N.E. R., 4500 ft., Dec. 17, 1907.

Bill dirty yellow; feet dirty flesh-coloured; iris brown, orbit brownish yellow.

No. 534. ♂. Chambezi R., May 12, 1908.

Bill orange; feet orange-yellow; iris brown, orbit orange.

This bird is not uncommon throughout the country. Like all the Thrushes, away from human habitation, it is rather shy. It usually frequents the thickets on the large termite-mounds, in the woodland.

216. TURDUS STORMSI.

Turdus stormsi Hartl.; Reich. loc. cit. vol. iii. p. 694.

No. 350. ♀. Near Bunkeya R., 3400 ft., Sept. 1, 1907.

Bill orange-yellow, dusky brown over nostrils; feet dirty whitish; iris brown.

No. 553. ♂. Edge of Chimpili Plateau, N. of L. Bangweolo, June 8, 1908.

Bill dull orange; feet pale dull yellowish; iris brown.

No. 696. ♂. Kalungwisi Valley, Sept. 5, 1908.

Bill orange-yellow; feet greyish flesh-coloured; iris brown.

I found this Thrush not uncommon but extremely shy. I only met with it in dense forest near water. It has an alarm-note hardly distinguishable from that of the Common Blackbird (*T. merula*).

217. GEOCICHLA LITSIPSIRUPA STIERLINGI.

Geocichla litsipsirupa stierlingi Reich. loc. cit. vol. iii. p. 680.

Nos. 133, 134. ♂ ♀. Dikulwe R., 3500 ft., April 2, 1907.

Bill dark brown, lower mandible orange-yellow tipped brown; feet pale dirty yellowish; iris brown.

No. 207. ♀. Upper Lualaba R., 3500 ft., May 22, 1907.

Bill brownish horn-coloured, lower mandible orange-yellow tipped brownish; feet yellowish brown, legs much paler; iris dark brown.

No. 540. ♂. Luena, N. of L. Bangweolo, May 28, 1908.

Bill dark brown above, lower mandible and gape yellow, the tip brown; feet pale yellow; iris dark brown.

These birds have decidedly darker crowns than the typical *G. litsipsirupa*, but the other characters given by Reichenow seem hardly constant. I found it a rather scarce and shy bird.

218. Petrophila angolensis.

Petrophila angolensis (Sousa); Neave, loc. cit. p. 61.

No. 36. ? Kambove, 4500 ft., Feb. 16, 1907.

Bill black; feet dusky olive; iris darker brown.

No. 419. ♂. Lufupa R., Oct. 29, 1907.

Bill black; feet dusky brown; iris dark brown.

No. 621. ♂. Luwingu, N. of L. Bangweolo, July 21, 1908.

Bill and feet black; iris brown.

No. 419 is a very worn specimen, the black tips to the feathers on the dorsal surface having almost entirely disappeared.

This seems to be everywhere a scarce bird. It usually frequents wooded hill-sides.

219. Cossypha bocagei.

Cossypha bocagei Finsch & Hartl.; Neave, loc. cit. p. 62.

No. 47. ♂? Kambove, 4500 ft., Feb. 21, 1907.

Bill brownish horn-coloured, paler below; feet brownish grey; iris dark brown.

No. 369. ♀. Plateau near Upper Lualaba, 4500 ft., Sept. 24, 1907.

Bill dusky brown, base of lower mandible paler; feet pale grey; iris brown?

Nos. 715, 716. ♀ ♂. Kalungwisi R., Sept. 10, 1908.

Bill black; feet greyish olive; iris dark brown.

This bird frequents dense forest only, and being extremely shy is difficult to shoot. It has a musical but penetrating note.

220. COSSYPHA HEUGLINI.

Cossypha heuglini Hartl.; Neave, loc. cit. p. 62.

No. 56. ♂. Kambove, 4500 ft., Feb. 23, 1907.

Bill black; feet pinkish brown; iris brown.

No. 190. ♀. Upper Lualaba, 3500 ft., May 17, 1907.

Bill black; feet grey-brown; iris brown.

No. 333. ♀. Bunkeya R., 3000 ft., Aug. 22, 1907.

Bill black; feet dusky olive; iris brown.

This species is not confined to dense forest like the preceding. It is usually to be found in thickets, on old termite-mounds and river-banks. Except in the neighbourhood of human habitation, I have always found it very wary.

221. COSSYPHA BARBATA.

Cossypha barbata Finsch & Hartl.; Neave, loc. cit. p. 63.

No. 16. ♀. Kambove, 4500 ft., Feb. 9, 1907.

Bill bluish dusky, base of lower mandible paler; feet flesh-coloured; iris dark brown.

No. 146. ♀. Kaluli R., Lualaba Valley, 2500 ft., April 19, 1907.

Bill dusky horn-coloured, base of lower mandible greyish; feet pale flesh-coloured; iris brown.

No. 209. ♂. Upper Lualaba, 3500 ft., May 23, 1907.

Bill black, base of lower mandible paler; feet flesh-coloured; iris brown.

No. 391. ♀. Lufupa R., 4000 ft., Oct. 11, 1907.

Bill dusky; feet pale flesh-coloured; iris brown.

No. 756. ♂. Near Luena, L. Bangweolo, Oct. 4, 1908.

Bill dusky, base of lower mandible whitish; feet pale brownish flesh-coloured; iris dark brown.

This bird differs from its allies in venturing much more into the open, and is consequently more easily obtained.

222. ERYTHROPYGIA ZAMBESIANA.

Erythropygia zambesiana Sharpe; Neave, loc. cit. p. 63.

No. 99. ♂. Dikulwe R., 4000 ft., March 20, 1907.

Bill dusky, lower mandible yellowish at base; feet pale flesh-coloured; iris brown.

No. 229. ♀. Upper Lufira R., 3500 ft., June 13, 1907.

Bill dusky, gape and base of lower mandible yellow; feet greyish flesh-coloured; iris dark brown.

No. 378. ♂. Upper Lufupa R., 4000 ft., Oct. 2, 1907.

Bill brownish horn-coloured, base of lower mandible and gape yellow; feet brownish flesh-coloured; tarsi paler; iris olive-brown.

No. 444. ♂. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 17, 1907.

Bill brown, base of lower mandible and gape yellow; feet greyish flesh-coloured; iris brown.

No. 518. ♂. Chambezi R., 4000 ft., May 4, 1908.

Bill dark brown, base of lower mandible and gape yellow; feet pale greyish flesh-coloured; iris dark brown.

No. 721. ♂. Kalungwisi R., Sept. 13, 1908.

Bill dusky, base of lower mandible and gape yellowish; feet pale olive-grey; iris brown.

This is a very shy and restless little bird. It is frequently to be found among thickets and long grasses on the edge of native gardens. Its song consists of a few penetrating notes constantly repeated.

223. MYRMECOCICHLA ARNOTTI.

Myrmecocichla arnotti (Tristr.); Ogilvie-Grant, Ibis, 1908, p. 299.

Thamnolæa shelleyi Neave, loc. cit. p. 63.

No. 11. Kambove, 4500 ft., Feb. 6, 1907.

Bill and feet black; iris dark brown.

Nos. 59, 62. ♂ ♀. Kambove, Feb. 25, 1907.

Bill and feet black; iris brown.

No. 75. ♂. Kambove, March 4, 1907.

Bill and feet black; iris brown.

No. 95. ♂. Dikulwe R., 4000 ft., March 17, 1907.

Bill and feet black; iris brown.

This bird is common over a wide area in woodland country. It is usually found among the timber on the edge of an open space and seems to prefer the larger trees. The adult male is distinguished at a glance by its white crown and black throat, these colours being reversed in the female.

224. MYRMECOCICHLA NIGRA.

Myrmecocichla nigra (Vieill.); Ogilvie-Grant, Ibis, 1907, p. 299.

Nos. 22, 23. ♀♀. Kambove, 4500 ft., Feb. 11, 1907.

Nos. 24, 25. ♂♂. Kambove, 4500 ft., Feb. 12, 1907.

Bill and feet black; iris dark brown. The sexes are similar.

As Mr. Ogilvie-Grant has pointed out, this is quite a distinct bird from *M. arnotti*. It is, however, of interest to observe that at Kambove I obtained examples of both species, so that this would seem to be one of the few places where their ranges coincide.

This bird frequents much more open spots than does *M. arnotti*. The males are easily distinguishable in life from those of *M. arnotti*, owing to the fact that only the lesser and median wing-coverts are white, these being concealed when the bird is at rest; they then look entirely black.

225. PRATINCOLA TORQUATA.

Pratincola torquata (L.); Neave, loc. cit. p. 137.

No. 187. ♂. Upper Lualaba R., 3500 ft., May 16, 1907.

Bill and feet black; iris reddish brown.

No. 367. ♀. Upper Lualaba R., 3500 ft., Sept. 23, 1907.

Bill dusky; feet black; iris dark brown.

No. 572. ♂. Luena, N.E. of Bangweolo, June 13, 1908.

Bill and feet black; iris brown.

No. 757. ♂ juv. Luena R., Oct. 5, 1908.

Bill dusky, gape yellowish; feet black; iris brown.

This bird is common in the more open parts of the country.

226. Saxicola falkensteini.

Saxicola falkensteini Cab.; Neave, loc. cit. p. 64.

No. 133. ♂? Ruwe, 4500 ft., Nov. 7, 1907.

Bill brownish horn-coloured, somewhat paler below; feet dusky brown; iris dark brown.

This is a woodland species, found chiefly in hilly country. It lives in trees, but feeds on the ground.

227. Campicola pileata.

Campicola pileata (Seebohm); Neave, loc. cit. p. 66.

Nos. 203, 204. ♂ ♂. Upper Lualaba R., 3500 ft., May 22, 1907.

Bill and feet black; iris brown.

No. 758. ♂ juv. Luena R., L. Bangweolo, Oct. 6, 1908.

Bill brown above, yellow below; feet dusky greyish; iris brown.

Nos. 812, 821. ♂ juv. Mansya R., near Lake Young. Nov. 2 & 4, 1908.

Bill brown above, yellow tipped with brown below; feet dusky; iris brown.

A common open-country species. It is much attracted by freshly burnt ground.

Fam. Sylviidæ.

228. Acrocephalus schœnobænus.

Acrocephalus schœnobænus (L.); Reich. loc. cit. vol. iii. p. 588.

No. 45. ♀. Kambove, 4500 ft., Feb. 21, 1907.

Bill dusky; feet dirty greyish; iris brown.

This is a rare bird in Central Africa according to my experience.

229. Acrocephalus bœticatus.

Acrocephalus bœticatus (Vieill.); Reich. loc. cit. vol. iii. p. 587.

No. 447. ♂. Near Serenje, N.E. R., Dec. 18, 1907.

Bill dusky above, yellow below; feet greenish yellow; tarsi brownish; iris brown.

230. MELOCICHLA MENTALIS.

Melocichla mentalis (Fras.); Reich. loc. cit. vol. iii. p 538.

No. 57. ♀. Kambove, 4500 ft., Feb. 23, 1907.

Bill blackish above, whitish below; feet bluish slate-coloured; iris brown.

No. 181. ♂. Junction of Lualaba and Lufupa Rivers, 3000 ft., May 11, 1907.

Bill dusky horn-coloured, lower mandible whitish tipped dusky; feet dark greyish; iris brown.

No. 390. ♀. Lufupa R., 4000 ft., Oct. 11, 1907.

Bill black above, whitish below; feet slate-coloured; iris orange-brown.

No. 761. ♂. E. of L. Bangweolo, Oct. 8, 1908.

Bill dusky, lower mandible greyish white; feet slate-coloured; iris reddish brown.

This bird is difficult to obtain, as on the slightest alarm it disappears into the long grasses in which it lives. It has a singularly sweet song.

231. CISTICOLA STOEHRI.

Cisticola stoehri Neave, loc. cit. p. 66.

I did not meet with this species again. It would therefore seem to be confined to the low ground of the Luangwa Valley.

232. CISTICOLA NANA.

Cisticola nana Fisch. & Reich. J. f. O. 1884, p. 260; Reich. loc. cit. vol. iii. p. 560.

No. 491. ♂. Chambezi Valley, 4000 ft., April 11, 1908.

Bill brownish horn-coloured, lower mandible whitish; feet flesh-coloured; iris reddish brown.

233. CISTICOLA RUFO-PILEATA.

Cisticola rufopileata Reich.; Neave, loc. cit. p. 66.

No. 82. ♀ juv. Dikulwe R., 4000 ft., March 14, 1907.

Bill brownish horn-coloured above, orange below; feet dull pinkish; iris olive greyish.

No. 97. ♂. Dikulwe R., March 18, 1907.

Bill dusky, somewhat paler below; feet pale pinkish brown; iris yellow-brown.

No. 246. ♂. Upper Lufira R., 3500 ft., June 21, 1907.

Bill brownish horn-coloured, paler below; feet brownish flesh-coloured; iris orange-brown.

No. 413. ♂. Lufupa R., 4000 ft., Oct. 26, 1907.

Bill brownish horn-coloured, lower mandible and gape yellowish; feet flesh-coloured; iris yellow-brown.

No. 437. ♂. Valley of Luapula R., 4000 ft., Dec. 6, 1907.

Bill black; feet pinkish brown; iris orange-brown.

234. Cisticola sylvia.

Cisticola sylvia Reich.; Neave, loc. cit. p. 66.

No. 137. ♀. Dikulwe R., 4000 ft., April 3, 1907.

Bill horn-brown, whitish below: feet pinkish flesh-coloured; iris yellow-brown.

No. 230. Juv. Upper Lufira R., 3500 ft., June 13, 1907.

Bill dusky, gape and lower mandible orange-yellow; feet orange-yellow.

No. 247. ♂. Upper Lufira R., June 21, 1907.

Bill brownish horn-coloured, lower mandible and gape yellow; feet yellow; iris olive-grey.

No. 315. ♀. Bunkeya R., 3000 ft., Aug. 8, 1907.

Bill yellow, culmen dark brown; feet yellow; iris pale olive-grey.

Nos. 660, 661. ♂ ♂. Lofu R., Aug. 13, 1908.

Bill dusky, whitish below; feet pale brownish flesh-coloured; iris reddish brown.

No. 670. ♀. Lofu R., Aug. 16, 1908.

Bill dusky, pale pink below; feet pale brownish flesh-coloured; iris reddish brown.

No. 694. ♂. Kalungwisi Valley, Sept. 4, 1908.

Bill brownish horn-coloured, lower mandible flesh-coloured; feet yellowish flesh-coloured; iris yellowish brown.

235. Cisticola rufa.

Cisticola rufa (Fras.); Reich. loc. cit. vol. iii. p. 567.

No. 578. Luena, June 20, 1908.

Bill brownish, yellow below; feet yellowish; iris brown.

No. 645. ♀. Lofu R., Aug. 7, 1908.

Bill black, orange-yellow below; feet yellowish brown; iris olive-brown.

No. 714. ♂. Kalungwisi Valley, Sept. 10, 1908.

Bill brownish horn-coloured, yellow below: feet yellowish flesh-coloured; iris olive-grey.

No. 720. ♀. Kalungwisi R., Sept. 11, 1908.

Bill brownish horn-coloured, yellow below; feet yellow; iris greyish olive.

No. 726. ♂. Kalungwisi R., Sept. 16, 1908.

Bill brown, yellow below; feet pale yellowish; iris greyish olive.

Nos. 767, 773. ♀ ♀. East of L. Bangweolo, Oct. 13, 15, 1908.

Bill brown, orange-yellow below; feet yellowish flesh-coloured; iris olive-brown.

Nos. 788, 793. ♂ ♂. Chambezi Valley, Oct. 24, 25, 1908.

Bill brownish, yellow below; feet yellowish flesh-coloured; iris olive-grey.

A fairly common species, usually found on the edges of forest.

236. CISTICOLA TERRESTRIS.

Cisticola terrestris (A. Smith); Reich. loc. cit. vol. iii. p. 558.

No. 705. ♂. Kalungwisi R., Sept. 9, 1908.

Bill brownish horn-coloured, flesh-coloured below; feet flesh-coloured; iris olive-brown.

Nos. 738, 744. ♂ ♀. Machinga Plateau, Kalungwisi district, Sept. 19, 20, 1908.

Bill brownish horn-coloured, flesh-coloured below: feet flesh-coloured; iris olive-grey.

No. 791. ♂. Lower Chambezi Valley, Oct. 25, 1908.

Bill dusky; feet yellowish flesh-coloured; iris orange-brown.

Nos. 815, 825. ♂ ♂. Mansya R., L. Young, Nov. 2, 5, 1908.

Bill brownish horn-coloured; feet brownish flesh-coloured; iris yellowish brown.

I met with this little bird only on the larger plains. It has a weak bobbing flight.

237. CISTICOLA STRANGII.

Cisticola strangei (Fras.); Reich. loc. cit. vol. iii. p. 544.

No. 12. ♂ ad. Kambove, 4500 ft., Feb. 8, 1907.

Bill dusky, paler below; feet pinkish brown; iris yellow-brown.

No. 70. Kambove, March 1, 1907.

Bill dusky, whitish below; feet pale salmon-brown; iris brown.

No. 240. ♀? Upper Lufira R., 3600 ft, June 17, 1907.

Bill dark brown, gape and lower mandible yellow; feet fawn-brown; iris olive-brown.

No. 294. ♀. Bunkeya R., 3000 ft., July 29, 1907.

Bill brownish horn-coloured, lower mandible flesh-coloured; feet brownish flesh-coloured; iris yellow-brown.

No. 366. ♂. Plateau near Lualaba R., 4000 ft. Sept. 23, 1907.

Bill brownish horn-coloured, paler below; feet flesh-coloured; tarsi paler; iris pale olive-yellow.

No. 611. ♂. Luwingu, July 17, 1908.

Bill dark brownish horn-coloured, base of lower mandible white; feet pinkish brown; iris brown.

No. 640. ♀. Lofu R., Aug. 6, 1908.

Bill dusky, fleshy horn-coloured below; feet brownish flesh-coloured; iris pale yellowish brown.

No. 703. ♂. Kalungwisi R., Sept. 8, 1908.

Bill brownish horn-coloured, whitish below; feet pale brownish flesh-coloured; iris brown.

No. 729. ♀. Kalungwisi R., Sept. 16, 1908.

Bill brownish horn-coloured, lower mandible flesh-coloured; feet pale yellowish brown; iris yellow-brown.

No. 774. ♂. E. of L. Bangweolo, Oct. 16, 1908.

Bill brownish horn-coloured, paler below; feet brownish flesh-coloured; iris golden brown.

238. CISTICOLA LUGUBRIS.

Cisticola lugubris Rüpp.; Reich. loc. cit. vol. iii. p. 552.

Nos. 328, 329. ♂ ♂. Bunkeya R., 3000 ft., Aug. 20, 1907.

Bill horn-brown, whitish at base of lower mandible; feet pale pinkish brown; iris red-brown.

No. 331. ♀. Bunkeya R., 3000 ft., Aug. 21, 1907.

Bill brownish horn-coloured, paler below; feet pale pinkish brown; iris reddish brown.

No. 780. ♂. E. of L. Bangweolo, Oct. 17, 1908.

Bill dusky; feet brownish flesh-coloured; iris reddish brown.

I found this Warbler decidedly local and only in very open country.

239. SCHŒNICOLA APICALIS.

Schœnicola apicalis (Cab.); Reich. loc. cit. vol. iii. p. 577.

No. 418. Lufupa R., 4000 ft., Oct. 29, 1907.

Bill dark brown above, whitish below: feet pale brown; iris olive-brown.

No. 450. ♂. Near Serenje, N.E. R., 4500 ft., Dec. 19, 1907.

Bill black, blue-grey below; feet pale greyish brown; iris olive-brown.

No. 451. ♂. Near Serenje, Dec. 19, 1907.

Bill black above, lower mandible blue-grey, base dusky; feet pale greyish brown; iris brown.

No. 609. ♂. Luena, July 15, 1908.

Bill dark bluish grey, whitish below; feet pale brownish; iris brown.

Not uncommon on open grassy plains and swamps, but difficult to shoot.

240. BRADYPTERUS MSIRI.

Bradypterus msiri Neave, Bull. B. O. C. xxv. p. 25 (1909).

This species differs from *B. nyassæ* Shelley, in its dull chestnut-brown colouring above, its dusky brown head, and faintly indicated buff eyebrows: it is also distinguished by its white throat and chest, and the chestnut colour of the sides of the body and under tail-coverts. It has also a longer and more slender bill. Total length 5·2 inches; culmen 0·57; wing 2·1; tail 2·7; tarsus 0·7.

No. 364. ♀ type. Bunkeya R., 3000 ft., Sept. 13, 1907.

Bill brownish horn-coloured, paler below at base; feet dull flesh-coloured; iris brownish.

This bird was obtained close to the site of the ruins of the chief village of Msiri, the former chief by conquest over a large region in this neighbourhood.

241. Calamonastes katangæ.

Calamonastes katangæ Neave, Ann. N. H. (8) vol. iv. p. 130 (1909).

Allied to *C. cinereus*, but a browner bird; the breast and abdomen white, the throat white mottled with brownish; the fore-neck ashy, forming a broad band. Total length about 4·1 inches; culmen 0·55; wing 2·3; tail 1·7; tarsus 0·8.

In the young bird, no. 92, the under surface is yellowish.

No. 92. Dikulwe R., 4000 ft., March 16, 1907.

Bill black; feet pinkish; iris golden brown, orbit brown.

No. 122. ♂. Dikulwe R., 4000 ft., March 29, 1907.

Bill dusky; feet pale flesh-coloured; iris and orbit reddish brown.

No. 223. ♀. Upper Lualaba R., 3500 ft., May 31, 1907.

Bill dusky, base of lower mandible paler; feet yellowish flesh-coloured; iris and orbit yellow-brown.

No. 429. ♀. Lufupa R., 3500 ft., Nov. 3, 1907.

Bill black; feet yellowish flesh-coloured; iris and orbit reddish brown.

No. 519. ♂. Chambezi R., 4000 ft., May 4, 1907.

Bill dusky; feet flesh-coloured; iris chestnut-brown.

I found this bird not rare but retiring and easily overlooked. It is particularly fond of the dense thickets which are found in the woodland, on the top of large termite-mounds.

242. Sylvia simplex.

Sylvia simplex Lath.; Neave, loc. cit. p. 67.

No. 814. ♂. L. Young, Nov. 2, 1908.

Bill brownish horn-coloured, base of lower mandible paler; feet brown; iris brown.

243. PHYLLOSCOPUS TROCHILUS.

Phylloscopus trochilus (L.); Reich. loc. cit. vol. iii. p. 644.

No. 395. ♂. Lufupa R., 4000 ft., Oct. 12, 1907.

Bill brownish horn-coloured, paler below; feet dark olive-brown; iris dark brown.

No. 396. ♀. Lufupa R., Oct. 12, 1907.

Bill brownish horn-coloured, paler below; feet olive-yellow; iris dark brown.

No. 440. ♂. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 16, 1907.

Bill brownish, base of lower mandible yellow; feet yellow-brown: tarsi dark olive-brown.

No. 784. ♂. E. of L. Bangweolo, Oct. 20, 1908.

Bill brownish, paler below; feet yellowish brown; iris brown.

No. 789. ♂. Chambezi R., Oct. 24, 1908.

Bill brownish, base of lower madible and gape yellow; feet olive-brownish; iris dark brown.

The Willow-Wren appears in fair numbers about October towards the beginning of the rains. It is usually seen in pairs or small parties.

244. APALIS FLORISUGA.

Apalis florisuga (Reich.); Neave, loc. cit. p. 67.

I did not met with this Luangwa Valley bird anywhere west of the Mchinga Escarpment.

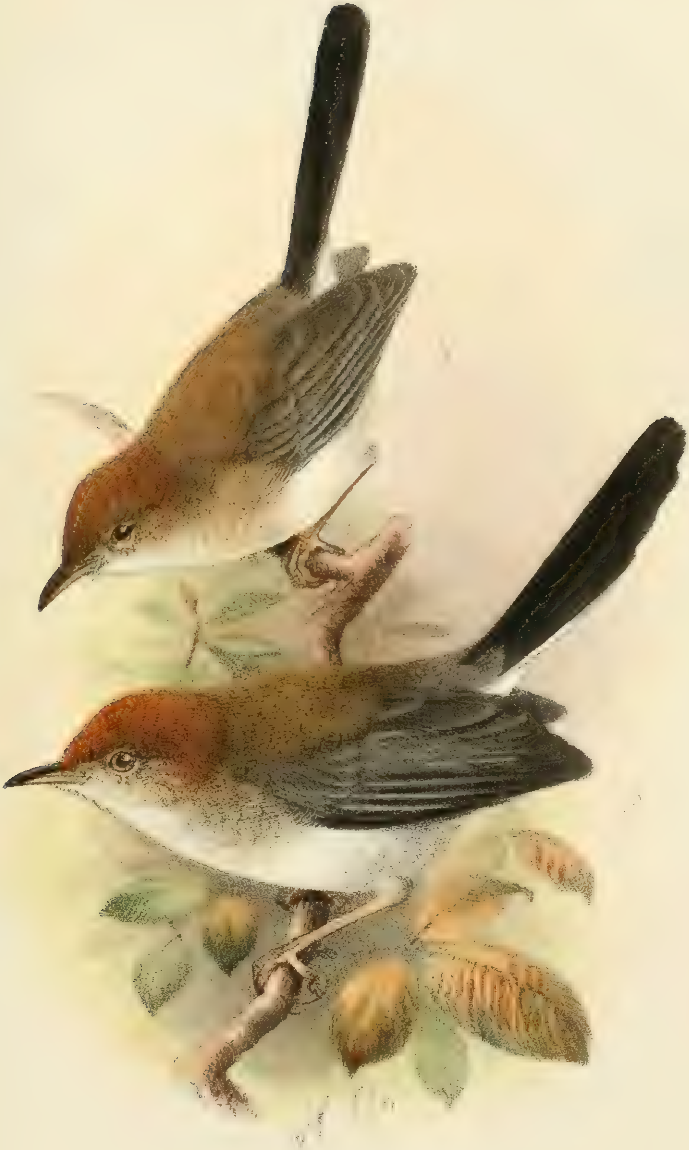
245. DRYODROMAS PEARSONI. (Plate II.)

Dryodromas pearsoni Neave, Ann. N. H. (8) vol. iv. p. 130 (1909).

This very distinct little species is allied to *D. rufifrons*, with some points of resemblance to *Prinia moelleri* Boc. The most noticeable point is the long black tail of the bird, the feathers of which have ashy tips; crown ferrugineous, back reddish olive, rump and upper tail-coverts ashy; under surface white, the throat and fore-neck being tinged with pale fawn; flanks ashy.

Total length 4·4 inches; culmen 0·45; wing 2·0; tail 2·0; tarsus 0·65.

Ibis. 1910. Pl. II.



West, Newman imp.

DRYODROMAS PEARSONI, ♂ ♀

No. 417. ♀. Lufupa R., 4000 ft., Oct. 28, 1907.

Bill brownish horn-coloured, base of lower mandible paler; feet brownish flesh-coloured; iris yellowish brown.

No. 422. ♂, type. Lufupa R., Oct. 30, 1907.

Bill brownish horn-coloured, lower mandible pink; feet brownish flesh-coloured; iris yellow-brown.

No. 423. ♀. Lufupa R., Oct. 30, 1907.

Bill brownish horn-coloured, base of lower mandible pink; feet yellowish flesh-coloured; iris yellow-brown.

This striking little bird I found not uncommon on the Upper Lufupa River, usually in pairs. It is very conspicuous on the wing, with its reddish head, white under parts, and black tail. It inhabits rather *tall* trees, not bushes, in the woodland, and flies with a loud clicking exactly as if it were going by clockwork.

246. EREMOMELA POLIOXANTHA.

Eremomela polioxantha Sharpe; Neave, loc. cit. p. 68.

No. 186. ♀. Lualaba R., 3200 ft., May 14, 1907.

Bill dusky brown, paler below; feet dusky; iris brown.

No. 211. ♂. Upper Lualaba R., 3000 ft., May 25, 1907.

Bill dusky brown, slightly paler below; feet dusky; iris orange-brown.

No. 377. ♂. Lufupa R., 4000 ft., Oct. 1, 1907.

Bill brownish horn-coloured, paler below; feet dusky brown; iris reddish brown.

No. 389. ♂ juv. Lufupa R., 4000 ft., Oct. 11, 1907.

Bill dusky; feet dark blue-grey; iris olive-grey.

No. 441. ♀. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 17, 1907.

Bill brown, lower mandible pinkish; feet dark brown; iris reddish brown.

No. 442. ♂ juv. Near Serenje, Dec. 17, 1907.

Bill brownish; feet grey; iris dark brown.

No. 617. ♂. Luwingu, July 20, 1908.

Bill dusky; feet black; iris reddish brown.

247. EREMOMELA PULCHRA.

Eremomela pulchra (Boc.); Neave, loc. cit. p. 68.

No. 37. ♀. Kambove, 4500 ft., Feb. 16, 1907.

Bill black; feet dusky, tarsi dull brownish; iris bright yellow, shading to brownish yellow externally.

No. 239. ♂. Upper Lufira R., 3500 ft., June 16, 1907.

Bill black, base of lower mandible greyish; feet yellowish brown; tarsi ash-coloured.

No. 438. ♂. Near Serenje, N.E. Rhodesia, Dec. 15, 1907.

Bill black; feet pinkish brown, tarsi darker; iris pale sulphur-yellow, orbit brown.

No. 514. ♀. Chambezi Valley, 4000 ft., May 1, 1908.

Bill dusky; feet pale brownish; iris pale yellow.

No. 550. ♂. Upper Luansenshi R., June 4, 1908.

Bill black; feet pale brown; iris pale yellow.

No. 620. ♂. Luwingu, July 21, 1908.

Bill black; feet pale yellowish brown; iris pale yellow.

Nos. 613, 614. ♂ ♀. Lofu R., Aug. 6, 1908.

Bill black; feet yellowish brown; tarsi darker; iris pale yellow.

No. 648. ♂. Lofu R., Aug. 8, 1908.

Bill black; feet brownish yellow, tarsi darker; iris pale yellow.

This is a common species in woodland country, and some individuals may be seen in nearly every bird-party.

248. EREMOMELA CANICEPS.

Eremomela caniceps (Cass.); Reich. loc. cit. vol. iii. p. 638.

No. 237. ♀. Bunkeya R., 3000 ft., Aug. 28, 1907.

Bill dusky; feet brownish flesh-coloured; iris and orbit yellowish brown.

This was the only individual met with. It was shot in a thicket on the bank of a stream.

249. EREMOMELA ATRICOLLIS.

Eremomela atricollis Boc.; Reich. loc. cit. vol. iii. p. 642.

No. 110. Dikulwe R., 4000 ft., March 24, 1907.

Bill black; feet orange-brown; tarsi ash-coloured; iris brown.

No. 238. ♀. Upper Lufira R., 3600 ft., June 16, 1907.

Bill black; feet pale brown; tarsi ash-coloured; iris dark brown.

This bird has the same habits as *E. pulchra*, but is very much rarer.

250. CAMAROPTERA SUNDEVALLI.

Camaroptera sundevalli Sharpe; Neave, loc. cit. p. 69.

No. 171. ♀. Lualaba R., 2500 ft., May 5, 1907.

Bill dusky brown, base of lower mandible pale pink; feet pale flesh-coloured; iris brown.

No. 260. ♂? Kambove, 4500 ft., July 1, 1907.

Bill brownish, base of lower mandible yellow; feet pinkish; iris and orbit reddish brown.

This species frequents dense bush on stream-banks &c. I did not meet with it in the woodland.

251. CAMAROPTERA GRISEOVIRIDIS.

Camaroptera griseoviridis (Müll.); Neave, loc. cit. p. 69.

This bird, though not uncommon in the Lower Luangwa Valley, does not appear to cross the Mchinga Escarpment.

252. EUPRINODES BRUNNEICEPS.

Euprinodes brunneiceps (Reich.).

Apalis cinerea (part.) Reich. loc. cit. vol. iii. p. 604.

No. 281. ♀. Kambove, 4500 ft., July 11, 1907.

Bill black; feet brownish flesh-coloured; iris yellow-brown.

The only specimen of this little-known bird obtained was shot in some dense forest on the bank of a stream.

Although Dr. Reichenow has united his *E. brunneiceps* with *A. cinerea* Sharpe, there would appear to be considerable grounds for keeping them distinct.

253. SYLVIELLA RUFICAPILLA.

Sylviella ruficapilla Boc.; Reich. loc. cit. vol. iii. p. 630.

No. 18. ♂. Kambove, 4500 ft., Feb. 10, 1907.

Bill pinkish brown, paler below; feet orange-brown; iris pale yellow, orbit red-brown.

No. 175. ♂. Busanga, Lualaba R., 3000 ft., May 9, 1907.

Bill horn-brown ; feet pink ; iris orange-brown.

No. 237. ♂. Upper Lufira R., 3500 ft., June, 15, 1907.

Bill brownish, lower mandible somewhat paler; feet brownish pink; iris yellow-brown.

No. 425. ♀. Lufupa R., 4000 ft., Oct. 30, 1907.

Bill brownish horn-coloured, lower mandible paler ; feet flesh-coloured; iris golden brown.

No. 439. ♀. Near Serenje, N.E. Rhodesia, 4500 ft., Dec. 16, 1907.

Bill brownish, paler below ; feet pinkish brown ; iris yellow-brown, orbit yellow-brown.

Met with solitary or in family-parties.

254. SYLVIELLA WHYTII Shell.

Sylviella whytei Shell. ; Reich. loc. cit. vol. iii. p. 627.

No. 284. ♂. Lufira R., near Lukafu, 3000 ft., July 23, 1907.

Bill brownish horn-coloured, lower mandible pinkish horn-coloured ; feet reddish brown ; iris yellow-brown.

No. 446. ♂. Near Serenje, N.E. Rhodesia, 4000 ft., Dec. 18, 1907.

Bill dark brownish ; feet greyish flesh-coloured ; iris pale olive.

No. 770. ♂. E. of L. Bangweolo, Oct. 14, 1908.

Bill brownish, lower mandible flesh-coloured ; iris brownish flesh-coloured ; iris orange-brown.

This little bird is usually solitary and is seen systematically hunting for insects on low trees.

255. BURNESIA LEUCOPOGON.

Burnesia leucopogon (Cab.); Sharpe, Hand-l. Birds, vol. iv. p. 241.

Prinia leucopogon Reich. loc. cit. vol. iii. p. 595.

No. 394. ♂. Lufupa R., 4000 ft., Oct. 12, 1907.

Bill black ; feet fawn-brown ; iris reddish brown.

This individual was one of a party of five which were hunting for insects in a thicket on the edge of dense forest. They were very noisy, maintaining an incessant harsh chatter.

The locality appears to indicate a considerable extension of the southward range of the species. It is one of the instances of the occurrence of western tropical birds in Katanga, especially in the western districts.

256. PRINIA MYSTACEA.

Prinia mystacea Rüpp.; Neave, loc. cit. p. 149.

No. 4. ♂ ad. Kapopo to Kansanshi, N.W. Rhodesia, 4000 ft., Jan. 19, 1907.

Bill black; feet pinkish brown; iris and orbit red-brown.

No. 15. ♂ ad. Kambove, 4500 ft., Feb. 9, 1907.

Bill black; feet pinkish brown; iris and orbit yellow-brown.

No. 266. ♂ ad. Kambove, 4500 ft., July 3, 1907.

Bill dusky, base of lower mandible paler; feet yellowish flesh-coloured; iris reddish brown.

No. 316. ♀. Bunkeya R., 3000 ft., Aug. 9, 1907.

Bill brownish horn-coloured, pinkish below; feet pinkish horn-coloured; iris bright reddish chestnut.

No. 330. ♀. Bunkeya R., Aug. 20, 1907.

Bill dusky, base of lower mandible paler; feet brownish flesh-coloured; iris reddish brown.

Nos. 618, 619. ♂ ♀. Luwingu, July 20, 1908.

Bill dusky, base of lower mandible whitish; feet yellowish flesh-coloured; iris yellow-brown.

Nos. 637, 638. ♂ ♀. Mporokoso, Aug. 2, 1908.

Bill dusky, base of lower mandible whitish; feet pinkish brown; iris yellowish brown.

No. 662. ♂. Lofu R., Aug. 13, 1908.

Bill dusky; feet pinkish brown; iris reddish brown.

No. 709. ♀. Luena R., Oct. 6, 1908.

Bill dusky; feet brownish flesh-coloured; iris reddish brown.

This is a common bird, which always seems to go in small parties.

[To be continued.]

V.—*On a Collection of Birds from Western Australia.* By W. R. OGILVIE-GRANT. *With Field-Notes by* Mr. G. C. SHORTRIDGE.—Part II.*

THE account of the Passeres represented in this Collection has already been published in the previous number of 'The Ibis.' The present part deals with the remaining Orders.

CHALCOCOCCYX PLAGOSUS Lath.

Chalcococcyx plagosus Math. p. 58.

a, b. ○ ♀. King River, 19th Dec.

Iris (*a*) dark brown, (*b*) dark yellow; bill black; legs dark olive-brown.

Total length, measured in the flesh, 6·5 inches.

CACOMANTIS FLABELLIFORMIS (Lath.).

Cacomantis flabelliformis Math. p. 57.

a–h. Big Grove, 19th March–2nd May.

Iris dark brown; eyelid yellow; bill dark brown, base of the lower mandible dull yellow; legs brownish-yellow, claws dark brown.

Total length, measured in the flesh, 10·0–10·5 inches.

[The Fan-tailed Cuckoo is a migratory species. It was very plentiful round Albany in March, April, and May, and was also observed at Southern Cross.—*G. C. S.*]

CUCULUS INORNATUS Vig. & Horsf.

Cuculus pallidus Shelley (nec Lath.), Cat. Birds B. M. xix. p. 261 (1891).

Cuculus variegatus Vieill.; Hartert, Nov. Zool. xii. p. 217 (1905).

Cuculus inornatus North, Ibis, 1906, p. 55; Math. p. 57.

a–c. ♂ et imm. Big Grove, 28th March–2nd May.

d. ♀ imm. Bramble Beach, Albany Harbour, 12th May.

e. ♂. Arthur River, 22nd June.

f. ♂. Dale River, 18th Dec.

g. Imm. Crookerdine Lake, 24th July.

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* Concluded from 'The Ibis,' 1909, p. 689.

h, i. ♂ vix ad. Kurrawang, 15th & 20th Sept.

Iris dark brown; eyelid yellow (dull greenish-yellow in the immature); bill of a dark horn-colour, greenish or yellowish-brown below; legs light brownish-yellow.

Total length, measured in the flesh, 12·25–13·25 inches.

[The Pallid Cuckoo was plentiful and migratory.—*G. C. S.*]

MEROPS ORNATUS (Lath.).

Merops ornatus Math. p. 55.

a–c. Ad. et ♂ imm. Avon River, 11th–18th Jan.
d. ♀. Stockpool, 23rd Jan.
e. ♂. Southern Cross, Dec.
f. ♂. Carnarvon, 25th Aug.
g–i. ♂. Clifton Downs, 21st Sept.–11th Oct.

Iris crimson; bill black; legs dull brownish-pink or yellowish-brown.

Total length, measured in the flesh, ♂, 10·75 inches, ♀, 9·25.

[The Australian Bee-eater is a migratory species which is plentifully distributed throughout Western Australia. It does not seem to extend so far south as Albany. Except during the breeding-season, it is gregarious.—*G. C. S.*]

HALCYON SANCTUS Vig. & Horsf.

Halcyon sanctus Math. p. 54.

Halcyon westralasianus Campbell, Emu, ii. p. 25 (1902) (Vasse River); Math. p. 54.

a–g. ♂ ♀ imm. King River, 11th Jan.–8th Feb.
h. ♀ imm. Oyster Harbour, 27th Feb.
i. ♀. Albany Harbour, 23rd March.
k. Imm. Chockerup, 22nd Jan.
l, m. ♀. Dale River, 18th Dec. & Jan.
n. Imm. Avon River, Jan.

Iris dark brown; bill black, base of the lower mandible of a light horn-colour; legs of a dark pinkish horn-colour.

Total length, measured in the flesh, 8·25–9·0 inches.

I have examined the type-specimen of *H. westralasianus* Campbell, which was procured by Mr. Carter at the Vasse

River, South-west Australia. It is undoubtedly an example of *H. sanctus* in worn plumage, which accounts for the differences in colour mentioned in the description. Mr. Campbell writes:—"Should the examination of a series of specimens from Western Australia prove the bird to be a new or western variety, I venture to suggest for it the name of *H. westralasianus*." This method of giving new names on the chance of their proving valid seems to me to be founded on an entirely wrong principle; it would surely have been better to wait till a series from Western Australia could be examined, when Mr. Campbell would have seen that his supposed new species was merely a well-known state of plumage of *H. sanctus*, which occurs equally among a series from Eastern Australia.

[The Sacred Kingfisher is plentiful in the south-west, but does not extend far inland; it is said to occur as far north as Houtman's Abrolhos where it appears to be a straggler.—*G. C. S.*]

HALCYON PYRRHOPYGIUS Gould.

Halcyon pyrrhopygius Math. p. 54.

a. ○. Southern Cross, Dec.

b–h. ♂ ♀. Laverton, 13th–22nd Oct.

i. ♂. Kurrawang, 20th Sept.

k. ♀. Carnarvon, 25th Aug.

Iris dark brown; bill dusky black, base of the lower mandible of a flesh-colour; legs pale olive-brown.

Total length, measured in the flesh, 8·75–9·5 inches.

[The Red-backed Kingfisher was plentiful in the central and western divisions, where it replaces *H. sanctus*. It was particularly numerous round Laverton, and while preferring the well-watered districts, was not confined to them.—*G. C. S.*]

DACELO CERVINA Gould.

Dacelo cervina Math. p. 54.

a–h. ♂ ♀. Clifton Downs, 20th Sept.–10th Oct.

Iris white; bill light brown above, of a dusky flesh colour below; legs dusky buff tinged above with olivaceous.

Total length, measured in the flesh, 16·25–17·0 inches.

[The Fawn-breasted Kingfisher was plentiful on the Gascoyne River and extended as far north as Murchison. *D. gigas* has been introduced into the south-western division.—*G. C. S.*]

EURYSTOPUS ARGUS Hartert.

Eurostopus argus Math. p. 55.

a–d. ♂ ♀. Laverton, 20th Oct.–10th Nov.

Iris blackish-brown; bill dusky, blackish-brown at the gape; legs light dusky brown.

Total length, measured in the flesh, 11·5–12·5 inches.

[The Lesser White-throated Nightjar was also observed on Bernier Island and around Carnarvon.—*G. C. S.*]

PODARGUS STRIGOIDES (Lath.).

Podargus strigoides Math. p. 52.

a, b. ♂ et ♀ imm. King River, 24th Dec.

c. ♀. Stockpool, 21st Jan.

d–f. ♂ ♀. Parker's Range, 7th & 9th Aug.

g–n. ♂ ♀. Kurrawang, 8th–15th Sept.

Iris deep yellow, outer ring occasionally freckled with orange and grey; bill of a dull olive slate-colour; sides of mandible tinged with brown; legs dull olive-brown.

Total length, measured in the flesh:—males 17·5–18·0 inches; females 16·0–16·5.

In some specimens the throat and fore-neck are washed with rufous or rust-colour; this is especially noticeable in a female example from Kurrawang shot on the 13th of September.

[Plentiful in the central and south-western divisions and said also to occur in the western division. It is silent except during the breeding-season, when it makes a noise at night resembling the cooing of a dove. The cry of the "More pork" (*Ninox boobook*) is often erroneously attributed to this bird. I am absolutely certain that this is the case.—*G. C. S.*]

MELOPSITTACUS UNDULATUS Shaw.

Melopsittacus undulatus Math. p. 51.

a. ♂. Carnarvon, 26th July.

Iris whitish-buff; bill yellowish-olive; cere of a bluish-slate-colour; legs of a light bluish-lead-colour.

Total length, measured in the flesh, 7·75 inches.

[The Warbling Grass-Parakeet is migratory and appears at uncertain times: it occasionally visits districts in enormous numbers. It is never found in the extreme south-west.—*G. C. S.*]

NEOPHEMA PETROPHILA Gould.

Neophema petrophila Math. p. 51.

a. ♂ imm. King River, 7th Jan.

b. ♂. Albany, 24th March.

c, d. ♂. Pelican Point, 29th March.

Iris dark brown; bill of a horn-colour, yellowish at the base; legs of a light slate-colour.

Total length, measured in the flesh, 9 inches.

[The Rock Parakeet feeds on the ground and frequents sandy or pebbly localities on the sea-shore or on the banks of estuaries.—*G. C. S.*]

PSEPHOTUS MULTICOLOR Temm.

Psephotus multicolor Math. p. 50.

a–e. ♂ ♀ et ♂ ♀ imm. Kurrawang, 6th Sept.–4th Oct.

f. ♀ imm. Hawksnest, 1st Nov.

Iris dark brown; upper mandible pale blue tipped with slaty-black, lower mandible of a dark slate-colour; legs of a dusky slate-colour.

Total length, measured in the flesh, 11·5–12·25 inches.

Contrary to what has been written by Gould and others, the female of this species is very different from the male. The back and breast are greyish-brown tinged with olive; the band across the lesser wing-coverts is dull scarlet, instead of yellow, the belly is pale green with scarcely a trace of red and the under tail-coverts are pale green, instead of pale yellow.

The specimen "*i*" described as the young of this species in the 'Catalogue of the Birds in the British Museum,' xx.

p. 566, is no doubt an adult female, as is indicated by the absence of any trace of white spots on the inner webs of the primaries.

[The Many-coloured Parakeet was not uncommon in the central and western divisions, and was observed flying about in small flocks.—*G. C. S.*]

BARNARDIUS SEMITORQUATUS (Quoy & Gaim.).

Barnardius semitorquatus Math. p. 50.

a–d. ♂ et ♂ ♀ imm. Arthur River, 18th–22nd June.

e. Imm. Dale River, 16th Dec.

Iris dark brown; bill of a whitish horn-colour; cere and legs dusky.

Total length, measured in the flesh, 15·5–17·25 inches.

The type-specimen of this species was procured at King George's Sound, South-west Australia. As shown by the description "alis subtùs albo notatis," it was an immature bird and had the breast and belly bright green, with no indication of a yellow band.

Three specimens in the British Museum from Darling Range, S.W. Australia, presented by Mr. G. Firth Scott, agree with Quoy & Gaimard's description of their *Psittacus semitorquatus*; likewise an immature male from Arthur River, Wagin, killed by Mr. Shortridge on the 22nd of June.

Mr. Shortridge also procured at Arthur River, Wagin, at the same time, three specimens (one fully adult and two nearly so) which have a yellow band across the breast, and in this respect approach *B. zonarius* Shaw, which is found in West Australia and in the interior: they resemble typical *B. semitorquatus* in all other respects, namely, in their larger size (wing 7·0–7·5 inches), larger bill, and in the fact of their possessing a red band across the forehead.

It is on birds in this plumage from the Wagin district that Mr. Mathews was at one time disposed to found a new subspecies. But the arguments against adopting this view are, *first*, that I am by no means sure that the adult of *B. semitorquatus* does not *normally* assume a yellow band across the breast, as all the evidence seems to point in that direction. *Secondly*, that at Beverley, where Mr. Shortridge procured three specimens, one is typical *B. zonarius*, with no red band on the forehead and the whole breast yellow; a second is similar, but possesses a distinct red band across the forehead; while the third is a typical example of *B. semitorquatus*. It is evident that at Beverley the ranges of *B. semitorquatus* and *B. zonarius* meet, and probably the birds to some extent interbreed, which would account for the intermediate forms to be found there.

[The Yellow-collared Parakeet was very abundant in the south-western division, but rare around Albany. Among the colonists it is commonly known as the "Ring-neck" or "Twenty-eight."—*G. C. S.*]

BARNARDIUS ZONARIUS (Shaw).

Barnardius zonarius Math. p. 50.

Platycercus occidentalis North, Records Austr. Mus. ii. p. 83 (1893).

Barnardius occidentalis Math. p. 50.

*a**, *b*. ♀ imm. Stockpool, 23rd Jan.

c. ♂ imm. Crookerdine Lake, 24th July.

d, *f*. ♂ ♀. Parker's Range, 7th & 8th Aug.

g, *i*. ♂ ♀. Kurrawang, 3rd Sept.–4th Oct.

k, *l*. ♂. Clifton Downs, 21st Sept. & 9th Oct.

Iris dark brown; bill of a light horn-colour; cere dusky; legs dusky grey.

Total length, measured in the flesh, 14·25–15·5 inches.

I have no doubt that *B. occidentalis*, a name given by North to two specimens of *Barnardius*, procured at Roeburne in the north-western division of West Australia, is synonymous with *B. zonarius*: the birds procured by Mr. Shortridge on the Gascoyne River agree well enough with Mr. North's description, being also in worn plumage, but they are most certainly referable to *B. zonarius*.

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* Specimen "*a*" has a red band on the forehead.

PORPHYROCEPHALUS SPURIUS (Kuhl).

Porphyrocephalus spurius Math. p. 49.

a–c. ♂ ♀ et ♂ imm. King River, 7th & 10th Dec.

d. ♂. Albany, 25th March.

Iris dark brown; eyelid and cere dusky; bill of a bluish-slate-colour, darker at the tip; legs of a dark slate-colour.

Total length, measured in the flesh, 15 inches.

[The Red-capped Parakeet was generally seen in small parties, often in pairs. It inhabits the extreme south-western districts and is fairly plentiful round Albany. It is known among the colonists as the "King Parrot."—*G. C. S.*]

PLATYCERCUS ICTEROTIS (Kuhl).

Platycercus icterotis Math. p. 49.

a–f. ♂ et ♂ ♀ imm. King River, 13th Dec. to 7th Jan.

g. Imm. Big Grove, 2nd May.

h. ♂. Arthur River, 22nd June.

i, k. ♂ imm. Dale River, 16th Dec. & Jan.

l. Imm. Stockpool, Jan.

Iris dark brown; bill of a light bluish-horn-colour; cere dusky black; legs grey in the adult, of a pinkish-slate-colour in the immature bird.

Total length, measured in the flesh, 10·5 11·75 inches.

The series, which includes mostly immature birds, exhibits various and somewhat puzzling stages of plumage: as regards the colouring and pattern of the back; specimen "*l*" approaches *P. xanthogenys*.

[The Yellow-cheeked Parakeet was very plentiful in the south-western division.—*G. C. S.*]

PLATYCERCUS XANTHOGENYS Salvad.

Platycercus icterotis xanthogenys Hartert, Nov. Zool. xii. p. 212 (1905) [Beaufort & Cranbrook, W. Australia].

Platycercus xanthogenys Math. p. 49.

a–c. ♂ et ♂ ♀ imm. Parker's Range, 10th–12th Aug.

Legs grey.

Total length, measured in the flesh:—male 11·75 inches, female 10·5 inches.

This species was first described by Count Salvadori from a specimen in the British Museum which had formed part of the Gould Collection, its origin being otherwise unknown. Subsequently Dr. Hartert recorded examples in the Tring Museum from Beaufort and Cranbrook, which places (according to the Editors of the 'Emu,' vii. p. 117 (1907)), are in Western Australia. Its discovery by Mr. Shortridge at Southern Cross is therefore of interest. It is very easily distinguished from *P. icterotis* (Kuhl) by the darker greenish-grey (not sap-green) colour of the back and the margins of the innermost secondaries, while the middle pair of tail-feathers are mostly dark purplish-blue, instead of green.

CALOPSITTACUS NOVÆ-HOLLANDIÆ (Gmel.).

Calopsittacus novæ-hollandiæ Math. p. 47.

a, b. ♂ ♀. York, 2nd Jan. (*J. W. Bell*).

Iris dark brown: bill of a bluish-lead-colour, darker at the tip.

[The Cockatoo Parakeet is gregarious and migratory, and, though often plentiful, is uncertain in its appearance. It was observed as far south as Beverley. Its presence in the coastal districts seems to be influenced by the droughts inland.—*G. C. S.*]

CACATUA ROSEICAPILLA Vieill.

Cacatua roseicapilla Math. p. 47.

a–d. ♂ ♀. Laverton, 23rd Oct.

Iris crimson in the adult, dark brown in the immature bird; wattles round the eyes white tinged with pink; legs mealy grey.

Total length, measured in the flesh, 15·5–16·0 inches.

[The Rose-breasted Cockatoo, like its allies, is gregarious and at times plentiful, though its appearance in the central and western divisions is uncertain. It is called 'Galah' by the colonists.—*G. C. S.*]

CACATUA GYMNOPIS Sclat.

Cacatua gymnopsis Math. p. 47.

a, b. ♂ ♀. Clifton Downs, 5th & 10th Oct.

Iris dark brown, naked skin on the face of a mealy slate-colour; bill bluish-white tinged with buff; legs of a light dusky slate-colour.

Total length, measured in the flesh, 16·0 inches.

The occurrence of this species in the western division of West Australia shews a considerable extension of its range. It was known to occur in the interior of Queensland, New South Wales, and South Australia, and possibly in North-western Australia.

[The Bare-eyed Cockatoo is gregarious, and was very plentiful on the Gascoyne River, going about in flocks of many hundreds.—*G. C. S.*]

CALYPTORHYNCHUS STELLATUS Wagl.

Calyptorhynchus stellatus Math. p. 46.

a. ♂ imm. Clifton Downs, 28th Sept.

Iris dark brown; bill of a light bluish-horn-colour; legs dusky.

Total length, measured in the flesh, 22·5 inches.

I am quite uncertain what name to apply to this immature bird. It seems doubtful whether *C. stellatus* is really distinct from *C. macrorhynchus* Gould and *C. banksi* (Lath.).

[I found this species not uncommon on the Upper Gascoyne River: it is gregarious in its habits.—*G. C. S.*]

CALYPTORHYNCHUS BAUDINI Vig.

Calyptorhynchus baudini Math. p. 46.

a–c. ♂. King River, 28th Dec. & 1st Jan.

Iris dark brown; eyelids black (blotched with pink in the most adult birds); bill of a horn-colour, dark at the tip; legs dusky greyish-brown.

Total length, measured in the flesh, 22·0–23·5 inches.

[Baudin's Cockatoo is gregarious in its habits: it was very plentiful in the south-western division.—*G. C. S.*]

GLOSSOPSITTACUS PORPHYROCEPHALUS Dietr.

Glossopsittacus porphyrocephalus Math. p. 45.

a–e. ♂ ♀. King River, 28th Dec. to 12th Jan.

f. ♂. Big Grove, 27th March.

g–i. ♂ ♀. Crookerdine Lake, 17th–30th July.

k. ♂. Kurrawang, 18th Sept.

Iris dark brown; bill slate-black: legs of a greyish-slate-colour.

Total length, measured in the flesh, 7·0–7·5 inches.

[The Purple-crowned Lorikeet is gregarious and was very plentiful throughout the central and south-western divisions. It was generally seen feeding among the flowers of the Eucalyptus trees and its flight was very swift.—*G. C. S.*]

Ninox boobook Lath.

Ninox boobook Math. p. 43.

a. ♀. Big Grove, 15th April.
b. ♀ imm. King River, 13th Jan.
c. ♀. Kurrawang, 4th Oct.
d. ♀. Laverton, 18th Oct.

The plumage of these Owls is very puzzling. Of the four females listed above two specimens (*a* & *c*) are certainly adult and one (*b*) is obviously young. All three have the middle pair of tail-feathers uniform brown, with barely an indication of lighter cross-bars in specimen *b*. Specimen *d* appears to be a fully adult bird of the rufous-buff type. The crown and nape are largely marked with rufous-buff, and the middle pair of tail-feathers are conspicuously marked with seven equally wide bars of dark brown and pale rufous-brown. The material which I have examined seems to indicate that this is merely an individual variation and is not due to age. The colour of the iris seems to be very variable.

a, *b*. Iris yellow; cere and bill pale bluish, shading into black at the tip; legs of a light bluish-lead-colour, nails dark brown.

c. Iris brownish-black: bill pale bluish, shading to indigo at the tip.

d. Iris of a dark greyish-sage-colour; bill pale bluish, shading to indigo at the tip.

Total length, measured in the flesh, 13·0–13·5 inches.

The wing-measurements are as follows:—*a*, 8·7 inches; *b*, 8·9; *c*, 9·1; *d*, 9·1.

[The Boobook Owl was plentiful. It is known to the natives as the 'Morepork,' in imitation of its cry.—*G. C. S.*]

PANDION LEUCOCEPHALUS Gould.

Pandion leucocephalus Math. p. 43.

a–c. ♂. Bernier Island, 8th–11th July.

Iris deep yellowish-brown; bill and cere slate-black; legs bluish-white, claws of a dark slate-colour.

Total length, measured in the flesh, 21·5–22·0 inches; wing 16·1–16·2.

[The Osprey was fairly plentiful in the coastal districts and particularly numerous on the islands off the coast.—*G. C. S.*]

CERCHNEIS CENCHROIDES (Vig. & Horsf.).

Cerchneis cenchroides Math. p. 42.

? *Cerchneis unicolor* Milligan, 'Emu,' iv. p. i (1904) [Yalgoo].

a. ♂ imm. Dale River, 18th Dec.

b–e. ♂ ♀. Kurrawang, 14th–29th Sept.

f. [♂]. Laverton, 20th Oct.

g, h. ♂ ♀. Clifton Downs, 21st Sept.

Iris dark brown; orbits, cere and gape yellow; bill pale bluish, blacker at the tip; legs dull yellow, claws of a slate-colour.

Total length, measured in the flesh, 12·25–13·5 inches.

Mr. Milligan believes that a specimen captured at Yalgoo, W. Australia, represents a distinct species which he has named *C. unicolor*. It is said to be much smaller than *C. cenchroides* and to have the general colour more rufous, while the tail (though the type-specimen is said to be an *adult male*) is described as rusty cinnamon. No doubt the sex has been wrongly determined.

The colour of the under parts differs greatly in individuals, some having these parts whitish while in others they are washed with pale cinnamon.

[The Nankeen Kestrel was very plentiful on the mainland and was also observed on Bernier Island. It is migratory in the south-west.—*G. C. S.*]

HIERACIDEA BERIGORA (Vig. & Horsf.).

Hieracidea berigora Math. p. 42.

Hieracidea orientalis (Schl.), Math. p. 42.

Ieracidea berigora, p. 208, & *I. orientalis*, p. 209, Hartert, Nov. Zool. xii. (1905).

a, b. ♂ et ♂ imm. Big Grove, 8th March & 2nd May.

c–f. ♀ et ♂ ♀ imm. King River, 24th Dec. to 26th Feb.

g. ♂. Arthur River, 2nd July.

h. ♂. Crookerdine Lake, 19th July.

i–m. ♀ et ♂ ♀ imm. Kurrawang, 14th Sept. to 2nd Oct.

Iris dark brown; naked skin round the eye bluish-white, occasionally tinged with dull yellow; cere bluish-white, occasionally yellowish; bill of a bluish-horn-colour, black towards the tip; legs pale bluish, claws of a slate-colour.

Total length, measured in the flesh, 16–19 inches.

The fine series of specimens of this Hawk collected by Mr. Shortridge shews all the stages of plumage from the immature to the adult. There can be no doubt that *H. orientalis* (Schl.) [Sharpe, Cat. Birds B. M. i. p. 422 (1874)], was founded on immature or dark-coloured examples of the present species. The plumage of some of the specimens in the above-mentioned series is somewhat puzzling, for there are birds with the breast, flanks, and thighs dark brown, which appear to have reached maturity. It seems probable that this species is more or less dimorphic, and that the light and dark brown phases of plumage are due to this cause and not to age, though it must be remembered that all young birds have the under parts dark brown.

[The Berigora Hawk was very abundant and widely distributed. It was the most plentiful bird of prey in the south-western and southern districts.—*G. C. S.*]

FALCO LUNULATUS (Lath.).

Falco lunulatus Math. p. 42.

a. ♂. Laverton, 18th Oct.

Iris dark greyish-brown; bare skin round the eye pale blue, narrow eyelid yellow; cere yellow; bill pale bluish, black at the tip; legs yellow, claws of a blackish-horn-colour.

Total length, measured in the flesh, 12·5 inches; expanse 29 inches.

[The White-fronted Falcon was plentiful in the inland districts of the south-west.—*G. C. S.*]

LOPHOICTINIA ISURA Gould.

Lophoictinia isura Math. p. 41.

a. ♂. Dale River, 19th Dec.

Iris yellow, freckled with brown: cere and bill varying from a greyish-white to a blackish-horn-colour at the tip; legs greyish-white.

Total length, measured in the flesh, 23 inches.

[The Square-tailed Kite was occasionally met with in the south-west, but was not plentiful.—*G. C. S.*]

HALIASTUR SPHENURUS (Vieill.).

Haliastur sphenurus Math. p. 41.

a–c. ♂ ♀ imm. Beechlands, 4th & 5th Feb.

Iris brown; bill of a horn-colour, darker at the tip: cere of a horn-colour; gape yellow; legs dusky white, claws of a slate-colour.

[The Whistling-Eagle appears at irregular intervals, and was frequently plentiful in the south-west, where several might often be seen together. It was observed on Bernier Island.—*G. C. S.*]

HALIAËTUS LEUCOGASTER (Gmel.).

Haliaëtus leucogaster Math. p. 41.

Adult. King River.

Bill of a dusky-slate-colour; legs greyish-white.

[The White-bellied Sea-Eagle was not uncommon in the coastal districts, and was frequently observed on Bernier Island, where several pairs were breeding. This species is known as the "Fish-Eagle" among the colonists.—*G. C. S.*]

EUTOLMAËTUS MORPHNOIDES Gould.

Eutolmaëtus morphnoides Math. p. 40.

a. ♂. Clifton Downs, 13th Oct.

Iris hazel; bill light bluish, blackish at the tip; legs bluish-white.

Total length, measured in the flesh, 18 inches.

There are only two examples of this species in the British Museum. Both are from Queensland and appear to be females, their measurements being considerably larger than those of the present specimen, which has the wing 12·7 inches in length.

The species is known as the "Little Eagle" among the colonists.

Uroaëtus audax (Lath.).

Uroaëtus audax Math. p. 40.

a. ♀. Rapids, Margaret River, 1st April.

Total length, measured in the flesh, 34 inches; expanse of wings 79 inches.

[The Wedge-tailed Eagle is widely distributed, and is said to be plentiful in the Stirling Range. It often destroys lambs, and is known as the "Eagle-Hawk" among the colonists.—*G. C. S.*]

Accipiter cirrhocephalus (Vieill.).

Accipiter cirrhocephalus Math. p. 40.

a. ♂ imm. Dale River, 18th Dec.

b. ♂ imm. Margaret River, 1st April.

Iris yellow; legs pale orange.

Total length, measured in the flesh, 12·5 inches.

Specimen *a* is in moult; the adult plumage is indicated on the upper parts by a few feathers among the scapulars and the three innermost primaries, which are dark ash-grey. The under surface is white barred with light chestnut.

Specimen *b* is a younger bird in the first plumage.

[The Collared Sparrow-Hawk was plentiful throughout the south-west.—*G. C. S.*]

Astur fasciatus Vig. & Horsf.

Astur fasciatus Hartert, Nov. Zool. xii. p. 207 (1905); Math. p. 40.

a. ♂. Avon River, 16th Jan.

b–d. ♀ et ♂ imm. Beechland, 23rd Jan. to 7th Feb.

Iris yellow; eyelid yellow; bill black, bluish at the base; cere and gape greenish-yellow; legs pale yellow; claws black.

Total length, measured in the flesh:—male 17 inches, female 20 inches.

The Australian Goshawk was very plentiful in the south-west. It is known as the "Chicken-Hawk" among the colonists.

Dr. Hartert says that the adult male of this species is strangely rare in collections. Of the three males registered above one is adult and two are immature.

CIRCUS GOULDI (Bonap.).

Circus gouldi Math. p. 39.

a, *b*. ♀. Beechland, 24th–26th Jan.

Iris dark brown, cere yellowish-buff; bill slate-black, pale bluish at the base; legs pale yellow, claws black.

Total length, measured in the flesh, 24–25 inches.

[Gould's Harrier was plentiful in the coastal swamps and marshy localities of the south-western division.—*G. C. S.*]

CIRCUS ASSIMILIS Jard. & Selb.

Circus assimilis Math. p. 39.

a. ♀. Laverton, 22nd Oct.

Iris umber-yellow, cere yellow, naked skin at the base of the mandible of a light bluish-lead-colour; bill bluish-grey, shading into slaty-black at the tip; legs pale yellow, claws slaty-black.

Total length, measured in the flesh, 23·5 inches; expanse of wings 54 inches.

[The Allied Harrier does not appear to be confined to swampy situations, as it was observed in the central and western divisions as well as on Bernier Island. It is probably less numerous than *Circus gouldi* in the south-western division.—*G. C. S.*]

PELECANUS CONSPICILLATUS Temm.

Pelecanus conspicillatus Math. p. 39.

a. Ad. Woyaline, 11th April.

b. ♀. Pelican Point, 29th March.

Iris dark brown; naked skin round the eye dull yellow; a spot of dull blue on the lower eyelid; inner and outer margins of the orbit blue; bill of a flesh-colour, veined with slate-blue, and becoming suffused over the top and towards the end; cutting edges of the terminal half and nail yellow; legs of a pale greenish-slate-colour.

PLOTUS NOVÆ-HOLLANDIÆ Gould.

Plotus novæ-hollandiæ Math. p. 37.

a. ♀. Gascoyne River, 12th Sept.

Iris light buff, freckled with grey; bill pale yellowish, dull green along the culmen; bare skin on the throat yellow; legs whitish-buff, tinged with pale bluish; feet and webs pale yellow.

Total length, measured in the flesh, 38 inches.

[The Australian Darter was a rare bird.—*G. C. S.*]

PHALACROCORAX MELANOLEUCUS (Vieill.).

Phalacrocorax melanoleucus Math. p. 37.

a. ♀. Big Grove, 30th March.

b. ♀. Oyster Harbour, 2nd March.

Iris dark brown; upper mandible dark slate-blue, tinged with brown along the culmen, lower mandible yellow; pouch yellow; legs black.

[The Little Cormorant was very plentiful around Albany and Perth, but was not observed at Carnarvon.—*G. C. S.*]

PHALACROCORAX HYPOLEUCUS (Brandt).

Phalacrocorax hypoleucus Math. p. 37.

a, *b.* ♂ et ♂ imm. Bernier Island, 7th & 11th July.

Adult. Iris dull emerald-green, orbits and skin below the eye bright peacock-blue, lores and a narrow line above and below the eye bright orange-yellow; pouch of a flesh-colour, pinkish at the base; bill slate-black; legs black.

Immature. Differs from the adult in having the orbits and skin beneath the eye of a flesh-colour tinged with bluish; and the sides, under parts, and nail of the bill dull yellowish, tinged and mottled with slate-colour.

[The Pied Cormorant was very plentiful from Perth northwards to Carnarvon, but was not observed around Albany.—*G. C. S.*]

PHALACROCORAX SULCIROSTRIS (Brandt).

Phalacrocorax sulcirostris Math. p. 37.

a. ♀. Laverton, 13th Oct.

b, c. ♂. Upper Gascoyne River, 21st Oct.

Iris emerald-green; bill dull black, of a dull slate- or brownish-flesh-colour below; pouch and base of the bill dull violet.

Total length, measured in the flesh, 23·5–26·0 inches.

[The Little Black Cormorant frequents pools and rivers and extends far inland. It does not seem to occur along the coast.—*G. C. S.*]

BIZIURA LOBATA (Shaw).

Biziura lobata Math. p. 37.

a, b. [♂.] King River, 6th & 7th Feb.

c, d. [♀.] Kalgan, 28th Feb.

e. [♂.] York, 2nd Jan.

Iris dark brown; bill olive-black; lower mandible suffused with dull pink at the extremity; legs slaty-black.

The male of this species is very much larger than the female, the bill and feet being especially so.

	Wing.	Middle toe with claw.
3 ♂ . . .	7·9–8·2 inches	3·7
2 ♀ . . .	6·6–6·8 ,,	2·9

[The Musk-Duck rarely, if ever, takes flight when disturbed; at the slightest sound it dives under the water and remains there for a considerable time.—*G. C. S.*]

STICTONETTA NÆVOSA (Gould).

Stictonetta nævosa Math. p. 36.

a. Ad. Southern Cross, 16th Aug.

Iris brown; bill dark olivaceous; legs of a bluish-slate-colour.

[I found the Freckled Duck a rare bird; it is most numerous in the interior, and sometimes visits the inland parts of the western division in flocks, after the rains.—*G. C. S.*]

NETTION GIBBERIFRONS S. Müll.

Nettium gibberifrons Math. p. 36.

a. Ad. Dwaladine, 21st Feb.

b, c. ♂ ♀ imm. Stockpool, 21st Jan.

d, e. ♂ ♀ imm. Laverton, 16th Oct.

Iris brown: upper mandible of a bluish lead-colour mottled with black, lower mandible with the basal half and tip of a lead-colour, and the rest of the terminal portion orange-yellow; legs of an olivaceous slate-colour.

These specimens throw no additional light on the difficult question regarding the characteristics of *N. castaneum* (Eyton) and *N. gibberifrons.* Two appear to be fully adult, while three are obviously young birds.

Total length, measured in the flesh, 15·5–17·0 inches.

[The Grey Teal was tolerably numerous in pairs.—*G. C. S.*]

ANAS SUPERCILIOSA Gmel.

Anas superciliosa Math. p. 35.

a. ♂. Big Grove, 29th April.

b. Ad. Arthur River, 24th June.

c–e. ♀. Dale River, 27th Dec. to 7th Jan.

Iris brown: upper mandible slaty-blue marked with black, lower mandible dull black, slaty-blue at the tip; legs of an olivaceous-slate-colour tinged with rusty salmon-colour or orange; claws black.

Total length, measured in the flesh, 21–23 inches.

CASARCA TADORNOIDES Jard. & Selby.

Casarca tadornoides Math. p. 35.

a. ♀. Big Grove, 30th March.

Iris dark brown bill slaty-black; legs of a slate-colour.

[The Australian Sheld-duck, or "Mountain Duck" as it is locally called, is tolerably plentiful, and is usually met with in flocks. It is generally distributed throughout the south-western, central, and western divisions, and is frequently found feeding on the sea-coast.—*G. C. S.*]

BOTAURUS PŒCILOPTILUS (Wagl.).

Botaurus pœciloptilus Math. p. 33.

a, b. ♂ ♀. Big Grove, 16th April.

c–f. ♂ ♀. Beechland, 23rd Jan. to 12th Feb.

Iris clear brownish-buff with a narrow outer circle of reddish-brown; bill of a dark olivaceous-slate-colour above, sides and under parts yellowish-olive; legs pale sea-green; soles of feet yellowish.

Total length, measured in the flesh, 27·5–30·5 inches; expanse 50 inches.

[The Australian Bittern is not uncommon in suitable localities in the south-west, and was plentiful in the swampy country round Busselton.—*G. C. S.*]

DUPETOR GOULDI (Bonap.).

Dupetor gouldi Math. p. 33.

a, b. ♂ ♀. King River, 27th Jan. & 14th Feb.

Iris pale yellow, with an outer ring of reddish-ochre; bill dark pinkish-brown, yellowish at the base of the lower mandible; legs dusky brown tinged with yellow, soles of the feet yellowish.

Total length, measured in the flesh, 25·5–26·0 inches.

[The Yellow-necked Mangrove-Bittern was not uncommon in the south-west, being met with singly or in pairs. It roosted by day in the trees overhanging the water, and its habits were very similar to those of *Nycticorax caledonicus.*—*G. C. S.*]

NYCTICORAX CALEDONICUS (Gmel.).

Nycticorax caledonicus Math. p. 33.

a–c. ♂ et ♀ imm. Beechland, 23rd–27th Jan.

d. ♀. Wonnerup, Busselton, 11th May.

e. ♀ imm. Carnarvon, 20th July.

Iris yellow; bill of a dark slate-colour, yellowish at the base of the lower mandible; legs yellow; claws pinkish, tipped with slate-colour.

Total length, measured in the flesh, 23–25 inches.

[This Night Heron was local, but plentiful where it occurred: it was numerous round Busselton.—*G. C. S.*]

Demiegretta sacra (Gmel.).

Demiegretta sacra Math. p. 33.

a. ♀. Big Grove, 24th March.

b–e. ♂ et ♀ imm. Bernier Island, 14th June to 3rd July.

Iris amber-yellow: bill dark sienna-brown, tinged with magenta above, and with ochre below; legs sea-green, tibiotarsal (knee) joints and soles of feet yellow: claws light brown.

[This Reef-Heron was plentiful on Bernier Island and was also observed around Carnarvon.—*G. C. S.*]

Ardea pacifica Lath.

Notophoyx pacifica Math. p. 32.

a, *b*. ♂ ♀. Laverton, 17th & 25th Oct.

Iris clear buff-yellow; bill black, lower mandible yellowish beneath, becoming greenish towards the base; lores tinged with emerald; gape greenish; legs dusky black.

Total length, measured in the flesh, 32·5 inches; expanse 57 inches.

The stomach contained tadpoles.

[The White-necked or Pacific Heron is a shy bird. It was observed around Albany and extends far inland to the central division. It was tolerably plentiful on the Gascoyne River.—*G. C. S.*]

Ardea novæ-hollandiæ Lath.

Notophoyx novæ-hollandiæ Math. p. 32.

a–c. ♂ et ♂ imm. Big Grove, 8th–17th April.

d. ♀. Oyster Harbour, 27th Feb.

e. Ad. Arthur River, 23rd June.

f. ♀ imm. Dale River, 5th Jan.

g. ♂. Clifton Downs, 24th Sept.

Iris yellowish-buff, with the outer circle pale reddish; bill dark yellowish-brown, or slate-black above and yellowish, greenish-yellow or of a horn-colour below, occasionally entirely black: bare skin on the face yellowish or slate-black; legs bright yellow shading to brownish above, or yellowish-green.

Total length, measured in the flesh, 24–27 inches; expanse 46·5 inches.

[The White-fronted Heron was very abundant, especially in the south-west, and was often observed in flocks, which frequented the sea-shore and rivers. It also occurred in the central division, but was not met with far inland.—*G. C. S.*]

HERODIAS TIMORIENSIS Less.

Herodias timoriensis Math. p. 32.

a. ♀. Big Grove, 1st May.

Iris pale golden-yellow, outer circle pale orange; eyelid and gape mottled with greenish-black; bare skin round the eye and nasal openings chrome-yellow; legs black, soles of the feet mottled with yellow.

[The Australian Egret was rare in the south-west; one example was observed on Bernier Island.—*G. C. S.*]

PLEGADIS FALCINELLUS (Linn.).

Plegadis falcinellus Math. p. 31.

a. Imm. Beechland, April.

An immature example of the Glossy Ibis with the culmen measuring 4·2 and the wing 9·6 inches.

CARPHIBIS SPINICOLLIS Reichenb.

Carphibis spinicollis Math. p. 30.

a. ♂. Kurrawang, 4th Oct.

Iris dark brown; bill black; bare skin on the head and neck sooty black, a small patch on the lower eyelid dusky pink; legs black, a band above the tibio-tarsal or "knee"-joint dark magenta.

The stomach was large but not muscular: it contained lizards, centipedes, spiders, grasshoppers, cockroaches, beetles, etc.

[The "Straw-necked" Ibis is gregarious and migratory at irregular intervals.—*G. C. S.*]

EUPODOTIS AUSTRALIS (J. E. Gray).

Eupodotis australis Math. p. 30.

a. ♂. Stockpool, 20th Jan.

Iris clear brown, buff yellow towards the pupil; bill of a pale straw-colour, slate-coloured along the culmen and at the tip; legs of a pale straw-colour.

Total length, measured in the flesh, 43 inches; expanse of wings 75 inches.

[The Australian Bustard is widely distributed throughout the central and western divisions: it is less abundant in the south-west and does not extend to the coast. It is known as the "Wild Turkey" among the colonists.—*G. C. S.*]

Burhinus grallarius (Lath.).

Burhinus grallarius Math. p. 29.

a. ♂. Oyster Harbour, 14th May.

b. Ad. Dale River, Jan.

c. ♀. Woyaline, 17th April.

Iris yellow; bill black.

Total length, measured in the flesh, 21·5 inches.

[The Southern Stone-Plover was fairly plentiful throughout the central and south-western divisions, but was seldom flushed during the day. It is known as "Wheelo" among the colonists.

A species of Stone-Plover, which is probably *Orthorhamphus magnirostris*, occurs round Carnarvon and on Bernier Island.—*G. C. S.*]

Tringa crassirostris (Temm. & Schl.).

Tringa crassirostris Math. p. 28.

a. ♂ imm. Carnarvon, 4th Aug.

Iris dark brown; bill dark olivaceous; legs dark olive-green.

Total length, measured in the flesh, 11·75 inches.

[The Great-billed Sandpiper was tolerably plentiful in flocks around Carnarvon.—*G. C. S.*]

Tringa canutus Linn.

Tringa canutus Math. p. 28.

a. ♂. Pelican Point, 29th March.

Iris, bill, and legs black.

Total length, measured in the flesh, 10 inches.

[The Knot was met with only in the south-west.—*G. C. S.*]

TRINGA SUBARQUATA Güldenst.

Ancylochilus subarquatus Math. p 28.

a, b. Adult. Carnarvon, 6th Aug.

Iris blackish-brown ; bill olivaceous-brown ; legs dark olivaceous, tinged with brown.

Total length, measured in the flesh, 8·25–8·5 inches.

[The Curlew-Sandpiper is gregarious and was plentiful around Carnarvon.—*G. C. S.*]

HETEROPYGIA ACUMINATA Horsf.

Heteropygia aurita Lath., Math. p. 28.

a. ♀. Kalgan, 28th Feb.

b. ♀. Laverton, 20th Oct.

c–e. ♂ ♀. Beechland, 24th–26th Jan.

Iris blackish-brown ; bill slate-brown, darker above ; legs of a pale olive-colour.

Total length, measured in the flesh, 8–9 inches.

[The Eastern Pectoral Sandpiper is at times gregarious and is occasionally met with far inland.—*G. C. S.*]

TRINGA RUFICOLLIS Pall.

Pisobia ruficollis Math. p. 28.

a–f. ♀. Kalgan, 8th–27th Feb.

g. ♀. Albany Harbour, 29th March.

h–k. ♀. Bernier Island, 8th July.

l. Adult. Carnarvon, 4th Aug.

Iris very dark brown ; bill black ; legs olivaceous-black.

[This little Stint was very plentiful both on the sea-coast and on the tidal estuaries. It is a gregarious species, and was often met with in large flocks, occasionally in company with equally large flocks of *Ægialitis ruficapilla* and other Waders.—*G. C. S.*]

GLOTTIS NEBULARIUS Gunn.

Glottis nebularius Math. p. 27.

a–c. ♂ ♀. Big Grove, 7th & 26th Mar.

d–e. ♂ ♀. Beechland, 26th Jan. & 4th Feb.

Iris very dark brown ; bill of a slate-colour, darker towards the extremity ; legs pale ochre-yellow, tinged with slate-colour.

Total length, measured in the flesh, 13·5–14·25 inches.

[The Greenshank was observed in flocks and was rather a shy bird.—*G. C. S.*]

TRINGOIDES HYPOLEUCUS (Linn.).

Tringoides hypoleucus Math. p. 27.

a. ♀. King River, 28th Feb.

b, c. ♀. Carnarvon, 6th & 23rd Aug.

Iris dark brown; bill of a dark olivaceous-slate-colour, dull pink towards the base of the lower mandible; legs light olivaceous-grey.

Total length, measured in the flesh, 7·75–8·25 inches.

[Single examples of this Sandpiper were observed throughout the south-western and western divisions, but it was not abundant.—*G. C. S.*]

HETERACTITIS BREVIPES (Vieill.).

Heteractitis brevipes Math. p. 26.

a–c. ♂ ♀. Carnarvon, 3rd–23rd Aug.

Iris dark brown; legs ochre-yellow, tinged with pale olive at the joints; claws of a dark slate-colour.

Total length, measured in the flesh, 10·5 inches.

[The Grey-rumped Sandpiper is gregarious and was plentiful around Carnarvon—*G. C. S.*]

LIMOSA NOVÆ-ZEALANDIÆ Gray.

Limosa novæ-zealandiæ Math. p. 26.

a. ♀. Carnarvon, 6th Aug.

Iris very dark brown; bill flesh-coloured at the base, shading into olivaceous-black towards the extremity; legs of a dark olivaceous-slate-colour.

Total length, measured in the flesh, 15 inches.

[The Bar-rumped Godwit was tolerably plentiful around Carnarvon, and was often observed going about in flocks with other Waders.—*G. C. S.*]

CLADORHYNCHUS LEUCOCEPHALUS Gray.

Cladorhynchus leucocephalus Math. p. 25.

a. ♂. King River, 6th Feb.

Iris and bill black; legs of a pale peach-colour.

Total length, measured in the flesh, 15·5 inches.

[The Banded Stilt, which is locally known as the "Rottnest Snipe," is gregarious, migratory, and very abundant on Rottnest Island at certain seasons. It is local throughout the south-western division.—*G. C. S.*]

ÆGIALITIS CUCULLATA Vieill.

Ægialitis cucullata Math. p. 25.

a. ♀ imm. Margaret River, 16th Feb.

Iris brown; eyelid orange-scarlet; bill dark brown, with flesh-colour at the base; legs of a flesh-colour, joints tinged with pale bluish, tips of toes and claws brownish.

Total length, measured in the flesh, 9 inches.

ÆGIALITIS MELANOPS (Vieill.).

Ægialitis melanops Math. p. 25.

a. ♂. Dale River, 14th Dec.

b, c. Ad. et imm. Avon River, 13th Jan.

d, e. ♂. Clifton Downs, 24th Sept. & 11th Oct.

Iris dark brown; eyelid scarlet; bill pale salmon-pink at the base, black at the tip; legs of a deep flesh-colour, occasionally tinged with orange; claws black.

Total length, measured in the flesh, 6·5–6·75 inches.

[The Black-fronted Dotterel is fairly plentiful and frequented the inland waters. It is rarely if ever gregarious. —*G. C. S.*]

ÆGIALITIS RUFICAPILLA Temm.

Ægialitis ruficapilla Math. p. 25.

a, b. ♂. Oyster Harbour, 2nd & 3rd March.

c, d. ♀. King River, 19th Jan. & 27th Feb.

e. ♂. Near Albany, 27th Feb.

f, g. ♀. Kalgan River, 10th Feb.

h–k. ♂ ♀. Bernier Island, 7th & 8th July.

Iris blackish-brown; bill slaty-black; legs of a dark slate-colour.

Total length, measured in the flesh, 6·0 to 6·5 inches.

The specimens killed on Bernier Island in July (midwinter) are in breeding-plumage, which seems curious.

[The Red-capped Dotterel is generally gregarious and very abundant. It frequents the seashore, banks of estuaries, sand-flats, &c.—*G. C. S.*]

OCHTHODROMUS MONGOLICUS (Pall.).
Ochthodromus mongolicus Math. p. 24.
a. ♂. Pelican Point, 29th March.
b. ♀. Kalgan River. S.W. Division, 3rd March.

Iris dark brown; bill black.

Total length, measured in the flesh, 8·25 inches.

The male from Pelican Point is in full breeding-plumage, a fact which is worthy of note.

OCHTHODROMUS GEOFFROYI (Wagl.).
Ochthodromus geoffroyi Math. p. 24.
a. ♀. Pelican Point, 29th March.
b–d. ♂ ♀. Carnarvon, 3rd–6th Aug.
e. ♀. Bernier Island, 29th June.

Iris blackish-brown; bill of a dark olivaceous-slate-colour; legs dull yellowish-buff; feet of a slate-colour.

Total length, measured in the flesh, 8·25 inches.

CHARADRIUS DOMINICUS P. L. S. Müll.
Charadrius dominicus Math. p. 24.
a. ♀. Big Grove, 9th March.
b–d. ♂ ♀. Pelican Point, 29th March.
e. ♀. Bernier Island, 9th July.
f. ♀. Beechland, 26th Jan.

Iris blackish-brown; bill dusky-black, yellowish-brown at the gape; legs of a dark slate-colour, blackish at the joints.

Total length, measured in the flesh, 9·5–10·5 inches.

[The Eastern Golden Plover frequents sheltered places along the coast, mud-flats, and lagoons.—*G. C. S.*]

ZONIFER TRICOLOR (Vieill.).
Zonifer tricolor Math. p. 24.
a–f. Ad. et imm. York, 2nd Jan.

Iris, eyelid, and bill yellow, the latter dark brown at the tip; wattles blood-red.

Total length, measured in the flesh, from 11·25–11·75 inches.

[The Black-breasted Plover is a local bird in the south-west and a regular migrant round Cape York. It goes about in flocks, rising singly or in pairs when flushed.—*G. C. S.*]

ERYTHROGONYS CINCTUS Gould.

Erythrogonys cinctus Math. p. 23.

a. Adult. Carnarvon, Nov.

HÆMATOPUS FULIGINOSUS Gould.

Hæmatopus unicolor fuliginosus Hartert, Nov. Zool. xii. p. 200 (1905).

Hæmatopus fuliginosus Math. p. 23.

a–g. ♂ ♀. Bernier Island, 11th June to 11th July.

Iris crimson; eyelids scarlet, tinged with orange; bill scarlet; legs pale lilac, claws yellowish.

This series entirely bears out the distinctions noted by Dr. Hartert between this species and *H. unicolor* from New Zealand.

[The Sooty Oyster-catcher was plentiful on Bernier Island and around Carnarvon.—*G. C. S.*]

HÆMATOPUS LONGIROSTRIS Vieill.

Hæmatopus longirostris Math. p. 23.

a–d. ♂ ♀. Bernier Island, 14th June to 12th July.

Iris deep rose-pink; eyelid and bill scarlet; legs pink, claws of a slate-colour.

Total length, measured in the flesh, from 18·5–19·5 inches.

[Like the last-mentioned species, the White-breasted Oyster-catcher was common on Bernier Island. It appeared however to be a less robust bird than *H. fuliginosus* and was rarely found on the windward side of the island, where the Sooty Oyster-catcher was most abundant. Both species are generally seen in pairs, and they frequently roost in flocks or small parties.—*G. C. S.*]

ARENARIA INTERPRES (Linn.).

Arenaria interpres Math. p. 23.

a–e. ♂ ♀. Bernier Island, 8th July.

Iris blackish-brown; bill black; legs deep orange, joints and claws brown.

Total length, measured in the flesh, 9·25 inches.

LARUS PACIFICUS (Lath.).

Gabianus pacificus Math. p. 22.

a–d. ♀ imm. King George's Sound, 20th & 21st March.

e–f. ♀ et ♀ imm. Bernier Island, 2nd July.

Adult. Iris ash-grey; eyelid scarlet; bill bright yellow, with a patch of red on either side of the extremity; terminal portion of cutting-edges of both mandibles of a dark slate-colour; legs ochre-yellow, tinged with pale olivaceous at the joints; claws slate-black.

Immature. Iris dark brown; eyelid dusky black: bill of a horn-colour, yellow towards the extremity; legs of a dark slate-colour.

Total length, measured in the flesh, 23–24·5 inches; expanse 57 inches.

[The Pacific Gull was tolerably plentiful, but less abundant than *L. novæ-hollandiæ*. Immature examples were numerous in the tidal estuaries and lagoons of the south-west.—*G. C. S.*]

LARUS NOVÆ-HOLLANDIÆ Steph.

Larus novæ-hollandiæ Math. p. 22.

a, b. Ad. et ♂ imm. King River, 18th Jan.

c. Imm. Kalgan, 8th Feb.

d. ♂ imm. Near Albany, 26th March.

e–h. ♀ et imm. Bernier Island, 10th–30th June.

Adult. Iris white; bill deep crimson, dusky at the tip; legs deep scarlet, claws of a slate-colour.

Immature. Iris dark brown; bill dusky black mottled with dull orange; legs brown tinged with yellowish.

Total length, measured in the flesh, 16·0–17·5 inches.

This series illustrates the change of pattern which takes place, in the three outer primaries, between the immature and fully adult specimens, the amount of white greatly increasing with age.

[The Silver Gull was everywhere very plentiful along the coast.—*G. C. S.*]

STERNA NEREIS Gould.

Sterna nereis Math. p. 21.

a–d. ♂ ♀ et imm. King River, 18th Jan.

e–h. ♂ ♀. Kalgan River, S.W. Division, 7th–10th Feb.

i. ♀. Carnarvon, 5th Aug.

Iris black; bill orange (olive-brown tinged with yellow at the gape in the immature); legs orange (brown tinged with yellow in the immature); claws dark brown.

Total length, measured in the flesh, 9·0–10·5 inches.

[The White-faced Tern was very plentiful, especially in the south-west, often uniting in large flocks.—*G. C. S.*]

STERNA BERGII Licht.

Sterna bergii Math. p. 20.

a. ♂. King River, 20th Jan.

b–e. ♂ ♀ et imm. Kalgan, 8th–10th Feb.

f–h. ♂ ♀. Bernier Island, 10th–30th June.

Iris blackish-brown; bill ochre-yellow, tinged with olive in the immature; legs dusky black, occasionally tinged with yellow.

Total length, measured in the flesh, 19·5–21·5 inches.

Two of the specimens from Bernier Island are in full breeding-dress; all the rest of the series are in immature or winter plumage.

[The Crested Tern was very plentiful.—*G. C. S.*]

HYDROPROGNE CASPIA Mont.

Hydroprogne caspia Math. p. 20,

a. Ad. King River, 20th Jan.

Iris black; bill coral-red, of a yellowish-horn-colour at the tip; legs black.

Total length, measured in the flesh, 23 inches.

[The Caspian Tern was not common.—*G. C. S.*]

ŒSTRELATA MACROPTERA Smith.

Œstrelata macroptera Math. p. 17.

a, b. ♀. Rabbit Island, 19th April

Iris dark brown: bill and legs black.

Total length, measured in the flesh, 16·5 inches; expanse 43 inches.

[The Great-winged Petrel was found breeding on Rabbit Island, King George's Sound, in company with the Little Penguin, *Eudyptula minor*. It is locally known as the "Mutton-bird."]

EUDYPTULA MINOR (Forst.).

Eudyptula minor Math. p. 15.

a, b. ♂. Rabbit Island, 18th April.

Iris freckled grey; bill dull black; legs of a dull flesh-colour; claws black.

Total length, measured in the flesh, 16–16·25 inches.

[The Little Penguin was breeding in small numbers on Rabbit Island and around King George's Sound.—*G. C. S.*]

PODICIPES NOVÆ-HOLLANDIÆ Steph.

Podicipes novæ-hollandiæ Math. p. 14.

a. ♂ imm. Stockpool, 25th Jan.

Iris dark brown; culmen of a dark slate-colour, sides of upper mandible and lower mandible yellowish-buff; gape pale green; legs dull sage-green.

[The Black-throated Grebe, locally known as the "Dabchick," is at times tolerably plentiful in suitable localities; but its visits are uncertain and it appears to be migratory.—*G. C. S.*]

FULICA AUSTRALIS Gould.

Fulica australis Math. p. 14.

a. Ad. Woyaline, 25th April.

Iris crimson; bill of a whitish-slate-colour; legs of a dark slate-colour.

Total length, measured in the flesh, 15·5 inches.

[The Australian Coot is a local species, but very plentiful around Wagin.—*G. C. S.*]

PORPHYRIO BELLUS Gould.

Porphyrio bellus Math. p. 13.

a. Ad. Big Grove, 22nd March.

b. ♀. Arthur River, 24th June.

Iris crimson; bill bright reddish-pink, darker at the base: legs of a deep flesh-colour, dusky-olive at the joints.

Total length, measured in the flesh, 19–20 inches.

[The Azure-breasted *Porphyrio*, or Purple Gallinule, was fairly plentiful in the south-west.—*G. C. S.*]

MICROTRIBONYX VENTRALIS (Gould).

Microtribonyx ventralis Math. p. 13.

a ♂. King River, 7th Dec.

b. Ad. Woyaline, 25th April.

c. Ad. Clifton Downs, 23rd Sept.

Iris orange-yellow; bill pale green, the basal part of the lower mandible coral-pink or orange.

Total length, measured in the flesh, 14–16 inches.

[The Black-tailed Native-hen, or "Water-hen," is an irregular migrant and appears at uncertain intervals, sometimes visiting parts of the country in large numbers.—*G. C. S.*]

PORZANA PLUMBEA (Gray).

Porzana plumbea Math. p. 13.

a. ♂. Big Grove, 20th April.

Iris and eyelid red; bill black; legs dull reddish-crimson: feet tinged with brown.

Total length, measured in the flesh, 9·0 inches.

[The Spotless Crake is not uncommon around Albany. It is very shy and frequents reedy swamps.—*G. C. S.*]

HYPOTÆNIDIA BRACHYPUS Swains.

Hypotænidia brachypus Math. p. 12.

a, b. ♂. Margaret River, 23rd March.

Iris hazel, bill dark cinnamon-brown, sides and base tinged with reddish; legs of a slate-colour, tinged with pink.

Total length, measured in the flesh, 11·0–11·5 inches.

[I believe that Lewin's Water-Rail is fairly plentiful in the south-west; but it is shy and easily overlooked.—*G. C. S.*]

OCYPHAPS LOPHOTES (Temm.).

Ocyphaps lophotes Math. p. 11.

a–h. ♂ ♀. Clifton Downs, 28th Sept. to 7th Oct.

Iris bright reddish-buff; eyelid dull crimson, bill slate-black; legs coral-pink.

Total length, measured in the flesh, 13·5 inches.

[The Crested Bronze-wing was very plentiful on the Gascoyne River and was occasionally met as far south as York and Beverley.—*G. C. S.*]

PHAPS CHALCOPTERA (Lath.).

Phaps chalcoptera Math. p. 10.

a. ♂. Arthur River, 19th June.

Iris dark brown; bill and cere dusky black; legs magenta-pink.

Total length, measured in the flesh, 13·5 inches.

[The Common Bronze-wing was plentiful in many parts of the south-western division, and extended inland. It was not so numerous in the western division. For some reason this species is said to be disappearing in Western Australia. In the extreme coastal districts it is replaced by *P. elegans*. It is migratory, especially in the interior, being more plentiful after rains.—*G. C. S.*]

PHAPS ELEGANS (Temm. & Knip).

Phaps elegans Math. p. 11.

a, b. ♂ ♀. Big Grove, 9th & 23rd March.

Iris dark brown; bill blackish, tinged with magenta; legs magenta-pink.

Total length, measured in the flesh, 11·5 inches.

[The Brush-Bronze-Wing was fairly plentiful in the south-west, especially in the coastal districts: it extended as far inland as Beverley.—*G. C. S.*]

GEOPELIA PLACIDA Gould.

Geopelia placida Math. p. 10.

a. ♂. Carnarvon, 25th Aug.

b–d. ♂ ♀. Clifton Downs, 4th Oct.

Iris bluish-white, bare skin round the eye pale blue, slightly tinged with green; bill of a dusky slate-colour, pale blue at the base; legs pink.

Total length, measured in the flesh, 8·5–9·25 inches.

GEOPELIA SHORTRIDGEI Grant.

Geopelia shortridgei Grant, Bull. B.O.C. xxiii. p. 73 (1909).

a. ♂. Carnarvon, 20th July.

This species is most nearly allied to *G. tranquilla* Gould, but is smaller. It resembles that species in the general coloration of the under parts and in having the fore-neck and chest narrowly barred with black. The forehead and crown are grey, the occiput is rufous, the feathers of the back and wings are largely washed with the same rufous colour; most of the inner wing-coverts and scapulars have a more or less irregular whitish or buff spot near the extremity of either web; and the upper tail-coverts are brownish-grey without dusky terminal bars.

From *G. cuneata* (Lath.), which the present species resembles in its smaller size, it may be at once distinguished by the transverse blackish lines on the fore-neck and chest and by the pinkish wash on the breast. It somewhat resembles that species in the light spotting on the wing-coverts and scapulars.

The under wing-coverts as well as the inner webs of the quills are mostly rufous-chestnut, the former being characteristic of *G. tranquilla* the latter of *G. cuneata*, which has the under wing-coverts grey.

Iris pale yellow; orbital skin dull orange; bill of a dark slate-colour tinged with magenta; legs of a flesh-colour; feet pink, claws of a light slate-colour.

Total length, measured in the flesh, 9·0 inches; wing (imperfect), ca. 4·0; tail 4·1; tarsus 0·6.

This specimen is intermediate in many respects between *G. tranquilla* and *G. cuneata*, and may prove to be a hybrid between those two species.

TURNIX VARIA Lath.

Turnix varia Math. p. 7.

a, b. ♂ ♀. Big Grove, 12th April & 2nd May.

c. [♀]. Dwaladine, 17th Feb.

d. ♂. Parker's Range, 13th Aug.

Iris deep pink, outer ring slightly paler; bill olivaceous—of a slate-colour above, pale bluish below; legs dull yellow, claws whitish-buff.

Total length, measured in the flesh, 7·5–8·0 inches.

[The Variegated Bustard-Quail was fairly plentiful: it frequented stony ridges in forest-country and was observed going about in pairs.—*G. C. S.*]

COTURNIX PECTORALIS Gould.

Coturnix pectoralis Math. p. 6.

a. ♀. Beechland, 9th Feb.

Iris reddish-brown; legs light pinkish-grey.

[The Pectoral Quail is plentiful in favourable localities at certain times of the year. It was abundant in the stubble-fields round Busselton in February 1907, and was said to be a regular visitor there, and occasionally numerous around York.—*G. C. S.*]

LIPOA OCELLATA Gould.

Lipoa ocellata Math. p. 6.

a, b. ♂ ♀. Woyaline, 24th & 29th April.

♂. Iris light yellowish-brown; bill slaty black; bare skin on the face dusky, below the eye bluish-white; legs dusky brown.

♀. Iris light yellowish-brown; bill of a dark horn-colour; bare skin on the face dusky; legs of a dusky slate-colour.

Total length, measured in the flesh, male 25 inches; female 27 inches.

[The Ocellated Megapode, known as the "Gnou" by the natives and "Mallee-hen" by the colonists, is fast disappearing, although its old nesting-mounds are to be found almost everywhere. It seems now to be entirely extinct in the west (on the Gascoyne River) and, although existing as far inland as Kalgoorlie, has become very rare in the central districts. It is very shy, frequenting dense undergrowth, and is not easy to flush. If put up it rises suddenly and flies rather rapidly for a short distance, dropping into thick scrub at the first opportunity.—*G. C. S.*]

DROMÆUS NOVÆ-HOLLANDIÆ Lath.

Dromæus novæ-hollandiæ Math. p. 5.

a–c. ♂ ♀ et juv. Parker's Range, 11th–18th Aug.

d, e. Ad. Kurrawang, 27th Sept.

f, g. Ad. Laverton, 17th Oct.

Iris clear hazel or buff yellow; bare skin on the head, neck and thighs bluish-white; bill olivaceous-black; legs dusky olivaceous-black.

[The Emu is widely distributed throughout the south-western, central and western divisions, being particularly numerous in the interior. It frequents open flats and scrubby plains and is rare in the forest-districts. The spotted form, *D. irroratus* Bartl., I believe to be founded on immature birds.—*G. C. S.*]

VI.—*Obituary*:—THOMAS SOUTHWELL, Prof. GIGLIOLI, and Dr. BOWDLER SHARPE.

A VERITABLE link with the past generation of Norfolk naturalists was the late THOMAS SOUTHWELL of Norwich, who died on the 5th of September, 1909, in the seventy-ninth year of his age. In the first volume of the Trans. Norf. & Norw. Nat. Soc. he wrote, "I have myself talked with men who have taken the eggs of the Avocet and Black-tailed Godwit, and who have seen the Bustard at large in its last stronghold. The Bittern was so common in Feltwell Fen that a keeper there has shot five in one day, and his father used to have one roasted for dinner every Sunday." Again, "I have found the eggs of Montagu's Harrier, and know those who remember the time when the Hen Harrier and Short-eared Owl bred regularly in Roydon Fen, and who have taken the eggs of the Water-Rail in what was once Whittlesea Mere."

This is indeed a peep into the past, and might serve as an introduction to any naturalist who did not happen to know Southwell. But as a matter of fact he must have been well-known not only to the naturalists of East Anglia, where he spent his life, but far beyond the confines of his own county. For although he did not travel much, he was a zealous correspondent, and his name would be familiar to many who never saw him, through the medium of his books and published writings.

Born at King's Lynn on June 15, 1831, as soon as he was old enough to turn to a profession he entered Gurney's Bank at Lynn, whence he was transferred to the branch at Fakenham and subsequently to Norwich. There he spent the remainder of his life, retiring from business in 1896 after exactly fifty years' service.

When the Norfolk and Norwich Naturalists' Society was founded in 1869 he was one of the original members, and long acted as honorary secretary, besides serving on the journal committee. The 'Transactions' of the Society, which he helped to edit from that time forward, frequently contained valuable papers of his own relating to the mammals and birds of the county, as well as to archæological subjects of local interest, such as ancient wildfowl decoys, swan-marks, and the former condition of the fen-lands. In 1879, when he published a new edition of Lubbock's 'Fauna of Norfolk,' he was elected president of the Society, an honour which was again conferred upon him in 1893. He had become a Fellow of the Zoological Society in 1872, and in 1881 was elected a member of the British Ornithologists' Union. In that year he published his first book, 'The Seals and Whales of the British Seas' (reviewed in the 'Field' of May 28, 1881), and to this subject for many years he continued to devote considerable attention. From 1884 onward he contributed to the 'Zoologist' an annual report on the seal- and whale-fisheries, of great interest and value, the statistics being collected from the most trustworthy sources of information. A reprint of these reports in book form would make a useful work of reference.

In 1902 he published an interesting volume on Sir Thomas Browne's observations on the 'Natural History of Norfolk,' which he edited from the MS. in the Sloane collection in the British Museum and in the Bodleian Library, Oxford, and elucidated with many critical notes. The difficulty of deciphering the MS. may be inferred from an inspection of the frontispiece to the volume, which gives a facsimile of one of Sir Thos. Browne's letters to Dr. Christopher Merrett, author of the 'Pinax Rerum Naturalium Britannicarum.' It is worth noting that Southwell not only detected errors of transcription which he corrected, but was able to supply two letters which were needed to make the correspondence with Dr. Merrett complete; these he printed in an Appendix.

Perhaps the most useful piece of work he accomplished, and that by which he will be best remembered, was his completion in 1890 of Stevenson's 'Birds of Norfolk, of which he wrote the third and concluding volume from the letters and manuscripts of the deceased author, supplemened by original matter of his own. This was very well done, and was much needed by those who possessed the first two volumes and were anxious to see the work completed on the original plan. Southwell's long personal acquaintance with the author and his command of the necessary materials, coupled with his own knowledge of the subject, enabled him to do complete justice to this difficult undertaking.

Although not a collector in the generally accepted sense of the word, Southwell lost no opportunity of securing specimens for the Norwich Museum, in which he took great interest; and when the collections, which had been commenced in 1825, were transferred to the Corporation and finally installed in Norwich Castle in 1894, he prepared an excellent 'Official Guide to the Norwich Castle Museum,' with plans and numerous illustrations. The account therein given of the collection of British birds, including many rarities procured in Norfolk, was written by Southwell, and forms not only an instructive introduction to the series, but also a useful collection of records.

If there was one subject more than another in which Southwell took special interest, it was the protection of birds in the close time, and particularly the preservation of such species as had their breeding haunts in Norfolk, which, by reason of continued persecution and in consequence of the reclamation of the waste lands to which they resorted, were being brought to the verge of extinction as breeding birds. On this subject he wrote much, and effectively, while the formation of local societies for the protection of birds in restricted areas, as, for example, at Breydon and at Wells, always elicited his encouragement and support. For many years he was a constant writer in the 'Zoologist,' and an occasional contributor to the Natural History columns of the 'Field,' where his letters and articles, always of an informing character, never failed to meet with the appreciation which they deserved. A long list might be given of his papers in the 'Transactions of the Norfolk and Norwich Naturalists' Society,' many of which were of an archæological character and full of curious information. Active-minded almost to the last, he was prostrated by a stroke of paralysis on August 11th, and lingered until September 5th, when he passed peacefully away. His wife having predeceased him in July, 1903, he leaves two daughters to mourn his loss.—J. E. H.

With much regret we have also to record the decease of two other distinguished Members of this Union—Dr. H. H. Giglioli, of Florence (on Dec. 14th), and Dr. R. Bowdler Sharpe, of the British Museum (on Dec. 25th). We propose to give some account of the Lives and Labours of these great ornithologists in our April number.

VII.—*Notices of recent Ornithological Publications.*

1. '*Annals of the Transvaal Museum.*'

[Annals of the Transvaal Museum. Vol. I. No. 4. August 1909 Pretoria.]

The only ornithological papers in the fourth number of this new periodical * are two by Mr. Haagner—a "Revision" of the difficult group of South African Grass-Warblers (*Cisticola*) and a description of two new birds from Portuguese East Africa. Of *Cisticola* Mr. Haagner recognises 19 species, one of which (*C. pretoriæ*) is described as new. The two birds from Portuguese East Africa are named *Anthoscopus robertsi* and *Heliolais kirbyi.*

2. '*Aquila,*' Vol. xv. 1908.

[Aquila. Zeitschrift für Ornithologie. Redact. Otto Herman. Tom. xv. Budapest, 1908.]

Our Hungarian contemporary has now completed its fifteenth volume, and we have received a copy of it, together with separate copies of some of the papers. As was to be expected, the Organ of the "Central Bureau of Hungarian Ornithology" is mostly devoted to the Birds of Hungary, but should by no means be neglected by the student of the European Ornis who is able to avail himself of the German translation printed in parallel columns with the Magyar text.

After a disquisition on the burning question how the study of the "flight of Birds" may help the experiments now being carried out on the "flight of Man," there comes a series of communications from numerous correspondents on various subjects relating to the Hungarian Ornis, among which migration holds an important part. Amongst these we find a paper by our friend Mr. R. B. Lodge on his experiences with the Eagles and Vultures of the Carpathians during a short visit which he paid to that district in September 1908. This article is illustrated by some excellent photographic plates of Golden Eagles and Griffon Vultures.

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* *Cf.* 'The Ibis,' 1909, p. 695.

It appears that the Hungarian ornithologists have already taken up the plan of marking captured birds with metal rings, as pursued at Rossitten, on which we find an instructive report by Mr. J. Schenk. The birds chiefly operated upon were Storks, Spoonbills, Gulls, and Night-Herons.

3. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. July, October, 1909.]

In the July number Mr. C. W. Richmond concludes his reprint of the ornithological portion of the writings of C. S. Rafinesque, which include papers and pamphlets in French, English, and Italian. According to his views, some of our present generic and specific names require alteration in consequence of Rafinesque's writings. Dr. C. W. Townsend contributes an interesting article on the use of the wings and feet by diving birds, with remarks on those that use the wings under water and those that do not ; he also writes fully on the invasion of New England by the Carolina Wren. Mr. S. Trotter discusses the geological and geographical relations of the land-birds of North-eastern America, their modifications, the alteration of their habits or habitats, and, in short, their change of status generally. Mr. Ruthven Deane gives the history of the unique specimen of Townsend's Bunting from a copy of the original manuscript sent by Townsend to Audubon. Mr. A. H. Felger furnishes an annotated list of the Water-birds of Weld, Morgan, and Adams counties in Colorado, with three maps ; and Mr. W. P. Taylor discusses hybridisation in Humming-birds, in consequence of having shot what he believes to be a hybrid. Lastly, we have the fifteenth Supplement to the A. O. U. 'Check-List,' of which a new edition is about to be published. In this we notice that it is proposed to substitute *Cryptoglaux* for *Glaux*, *Machetes* for *Pavoncella*, *Chæmepelia* for *Columbigallina*, *Archilochus* for *Trochilus*, *Ammodramus* for *Coturniculus*, *Passerherbulus* for *Ammodramus*, and *Vermivora* for *Helminthophila*. There are also changes in the titles of the families and subfamilies to suit the American avifauna; and *Falco tinnunculus* is excluded. Several proposed changes of generic and specific names, however, are not accepted. The list as a whole should be consulted by our readers.

In the October number Mr. S. Trotter conducts an interesting "Inquiry into the history of the current English names of North American land-birds," beginning with a "Nomina Avium of Arch. Ælfric" (955–1020 A.D.) and descending through eleventh and fifteenth century lists to the days of Catesby, Bartram, Barton, Kulm, Wilson, and later writers. Mr. S. Stansell writes on the birds of Central Alberta, describing the style of the country and the species found there, and incidentally the nests of *Totanus solitarius* and *Hesperiphona vespertina*. Mr. T. S. Roberts gives us a life-study of an American bird (*Xanthocephalus xanthocephalus*) in its breeding-colonies, with nine excellent photographs; Mr. E. Blackwelder furnishes a list of the birds observed in Iron County, Michigan, during a three months' geological survey in summer; Mr. H. W. Wright notices the nesting of *Vermivora pinûs* in Massachusetts; and Dr. J. Dwight, Junr., retells the extraordinary story of the Black Duck (*cf.* 'Auk,' 1909, p. 175), proving that the red-legged form is merely the adult of the brown-legged. Finally, Mr. W. W. Cooke gives his third Supplement to the "Birds of Colorado," with a bibliography of Coloradan ornithology; it extends over 22 pages, and forms a valuable addition to his former publications on the subject.

4. '*Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. vii. Nos. 11, 12 (September, October, 1909).]

These two numbers contain useful articles on the habits of the following species in captivity, with notes on the breeding of most of them:—*Phalaropus hyperboreus* (received from Iceland, by Mr. C. B. Smith), *Monticola saxatilis* and *Estrilda angolensis* (by Mr. R. Phillipps), *Myiadestes townsendi* and *Cissopis leveriana* (by Mr. H. D. Astley), *Spermestes nigriceps* and *Tharrhaleus jerdoni* (by Mr. W. E. Teschemaker), *Trachyphonus cafer* (with a good coloured plate) by Major B. R. Horsbrugh, and *Neophema venusta* (by Mr. W. A. Fasey).

Dr. A. G. Butler discusses the question of morality in Birds; Mr. F. Finn continues his notes on "Aviculture at the Zoo" (in which special attention is drawn to the splendid Eagle *Pithecophaga jefferyi* and two fine males of *Paradisea apoda* received from Sir W. Ingram), and gives us a further instalment of his "Stray Notes on Indian Birds," with a note (p. 331) on the warty heel-pads of two species of Woodpecker (*Dendrocopus macii* and *Brachypternus aurantius*).

In the "Correspondence" Mr. E. J. Brook furnishes a list of rare birds now in his aviaries, brought by Mr. Goodfellow from New Guinea.

5. *Bonhote on Migration.*

[Migration Notes from North Holland. By J. Lewis Bonhote. Ornis, 1909, pp. 162–173.

These Notes are the result of two visits made by our fellow-member to Holland, the first in the last week of August 1905, and the second for a month in the autumn of 1908. One of the North Sea islands was selected, and six miles of sandy and muddy shore brought under observation. A considerable number of species were noticed, but no great "rushes" were chronicled, a fact possibly due to the weather, which was summer-like, with light breezes. Mr. Bonhote's conclusions are as follows:—(1) That migration is usually undertaken in small parties rather than in large flocks; (2) that the number of species migrating on any particular day varies inversely as the barometric pressure; (3) that migratory birds are excessively fat on their departure, and thin on their arrival; (4) that among the Limicolæ the balance of evidence is in favour of the adults migrating earlier than the bulk of the young.

6. *Cory on the Birds of the Leeward Islands.*

[The Birds of the Leeward Islands, Caribbean Sea. By Charles B. Cory, Curator of Department of Zoology. Field Mus. Nat. Hist. Publ. No. 157. Orn. Ser. Vol. i. No. 5, Chicago, 1909.]

With the assistance of his colleagues at the Field Museum, Chicago, Mr. Charles B. Cory, who has laboured so long and so well on the ornithology of the Antilles, has been able to prepare an excellent summary of the present state of our knowledge of the birds of the Leeward Islands. Under this designation are included the islands called Aruba, Curaçao, Bonaire, Islas de Aves, Los Roques, Orchilla, Tortuga, Blanquilla, Los Hermanos, Testigos, and Margarita. Besides the specimens obtained by the two expeditions sent out by the Field Museum, other species previously recorded from these islands have been included in the list.

The islands are taken one by one, and after a short introduction and a notice of previous authorities, a list of species recorded as found on each is given. The islands lie along the north coast of Venezuela, and the birds are nearly all Venezuelan in form, although they have, in some cases, become sufficiently differentiated to require (according to the prevailing fashion) subspecific names. Mr. Cory now gives such names to *Dendrœca ruficapilla obscura* (Los Roques); *Conurus æruginosus tortugensis*, *Tiaris tortugensis*, and *Cœreba ferryi* (Tortuga); *Holoquiscalus orchillensis* (Orchilla); *Conurus neoxenus* and *Platycichla venezuelensis atra* (Margarita).

As we have said, the birds of the Leeward group are all Venezuelan or slightly modified Venezuelan forms, the only characteristic Antillean form met with there being *Margarops fuscatus*, which is "common in the gardens" on Bonaire.

A table of the species and subspecies, shewing their exact distribution, of the Leeward-Islands Birds is a useful addition to this memoir, and an outline map gives the exact position of the various islands.

7. *Dearborn on Birds from Guatemala.*

[Catalogue of a Collection of Birds from Guatemala. By Ned Dearborn, Assistant Curator of Ornithology. Chicago, 1907. Field Mus. of N. H. Publ. 125. Orn. Ser. Vol. i. No. 3.]

Mr. Dearborn bases his paper on three collections made for the "Field-Museum" of Natural History, in Chicago, and containing altogether 1187 specimens, which are referred to 305 species and subspecies. The principal collection was made by Mr. Dearborn himself in 1906. The author commences by an exact list of the localities which he visited in Guatemala, and devotes several pages to a description of their physical peculiarities.

The labours of the late Osbert Salvin and others, as explained in the 'Biologia Centrali-Americana,' have made us well acquainted with the Ornithology of Guatemala. Mr. Dearborn has, therefore, as was to be expected, found few novelties in his series, and has described only four as new: *Saucerottea cyanura guatemalæ*, *Diglossa montana*, *Regulus satrapa clarus*, and *Planesticus tristis rubicundus*. The last-named is based on a single specimen—how can anyone decide that it is not an individual variety?

Some short notes on the habits, exact localities, and other peculiarities are added under each species.

8. *Dewar and Finn on the Making of Species.*

[The Making of Species. By Douglas Dewar, B.A. (Cantab), I.C.S., F.Z.S., and Frank Finn, B.A. (Oxon), F.Z.S., M.B.O.U. London: John Lane, 1909.]

This work, which contains an examination into the more recent researches and theories of the cause or causes of Evolution, has been prepared by an Indian Civil Servant, Mr. Douglas Dewar, who has devoted his leisure time in India to zoological study and observation, and by a well-known writer of popular works of Natural History, Mr. Frank Finn. The authors regard Evolution as a theory now universally accepted, and devote most of their space to the discussion of the various explanations which have been suggested as likely to bring about the changes in animals and plants that have undoubtedly occurred.

The authors divide the Evolutionists of to-day into three schools, which they term the Neo-Lamarckian, the Wallaceian, and the Neo-Darwinian. Of these the first, represented by Cope, Spencer, Cunningham, Haeckel, and Naegeli, do not believe that Natural Selection is the important factor in the Evolutionary process, and that acquired characters can be and often are inherited. The Wallaceians, represented by Weismann, Poulton, and apparently by Lankester, believe in the all-sufficiency of Natural Selection to explain everything, and deny that acquired characters can ever be inherited. The third school, the Neo-Darwinians, to which the authors claim to belong, and in which they include Bateson, De Vries, Kellogg, and T. H. Morgan, steer a middle course, and, though still laying stress on the great importance of Natural Selection, believe that there are many other factors of importance to be taken into consideration.

The book is illustrated by a number of uncoloured plates to shew examples of phenomena among birds, such as recognition-marks, mimicry, and sexual and seasonal dimorphism. There is not much novelty in it, but it is worth reading by those who are interested in the subject, as containing a mass of information on the question of the origin of species brought together from different quarters. Birds are specially alluded to in the chapters on "Mutation" and "Hybridism."

9. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Pts. XIX.–XX. September, 1909.]

Mr. Dresser is now fast approaching the termination of his labours, though he finds that two more parts will be necessary to complete this work, owing to an unexpected accumulation of material during its progress, and more particularly to new discoveries in Northern Asia. Several very important species find their places in the present instalment, such as the Knot, of which authentic eggs are now figured for the first time in Britain, though eagerly sought for many years, the Curlew Sandpiper, of which the same might have been said before Mr. Popham's journey to the mouth of the Yenesei, and the Solitary Sandpiper. The Knots' eggs were obtained by the Russian Polar Expedition, and the present plate is a reproduction from the memoir of that Expedition (in Russian), that of the Curlew Sandpipers' eggs is from the same source, while those of the Solitary Sandpiper are figured from North Albertan specimens. The excellent notes of Mr. Buturlin on the birds of the Russian Empire are even more interesting than usual in these Parts, and add greatly to our knowledge of the range of many forms in Asia, while the plates are excellent and give an adequate idea of the variation in colour of the eggs, though possibly those of the Knot will prove less uniform than might be supposed from the specimens figured, which were all taken in the same district.

The woodcuts of nests are not quite of the same merit: some have come out badly, with the eggs almost white or far too dark.

10. *Dubois on* Buceros sharpii.

[Comment on doit envisager le type du *Buceros sharpii* de Elliot. Par le Dr. Alph. Dubois. Bull. Soc. Zool. de France, xxxiv. p. 129 (1909).]

In 1884 Dr. Dubois described and figured, under the name *Buceros* (*Bycanistes*) *leucopygus*, a Hornbill, of which two specimens had been obtained by Bohndorff in the Nyam-Nyam district of Central Africa. Dr. Reichenow has referred this species to *B. sharpii* of Elliot, and various other authors have misplaced it. M. Dubois now explains this at full length, and finds that *leucopygus* of Giebel (Zeitsch. ges. Nat. xlvii. p. 73, 1876) is the correct specific name of this Hornbill, which is most nearly allied to *B. fistulator*.

We shall be glad to know whether Mr. D. G. Elliot agrees with Dr. Dubois's views on this subject. Dr. Dubois states that *B. sharpii*, of which the typical specimen is in the British Museum, is merely a slight variety of a young male *B. fistulator*.

11. *Elliot on the Species of* Rheinardtius.

[Remarks on the Species of the Genus *Rheinardtius*. By D. G. Elliot, D.Sc., F.R.S.E., &c. Ann. Nat. Hist. ser. 8, vol. iv. p. 242 (1909).]

Mr. Elliot has lately examined the famous tail-feather in the Paris Museum upon which the name *Rheinardtius ocellatus* was established, and has compared it with specimens of the long tail-feathers of the birds from Annam which are usually called by that name. Mr. Elliot doubts whether this identification is correct, because he finds certain differences (which are carefully pointed out) between the typical feather and the corresponding feather of the form from Annam. Mr. Elliot, however, has omitted to mention that a "subspecies" of the Annamese bird has lately been found in Pahang, far down the Malay Peninsula, and described under the name *R. ocellatus nigrescens* by Mr. Rothschild (Bull. B. O. C. xii. p. 55, 1902). It is possible, therefore, that the original tail-feather may belong to this "subspecies"—at any rate, the comparison should be made.

12. *Grinnell on Three new Song-Sparrows.*

[Three new Song-Sparrows from California. By Joseph Grinnell. Univ. of Cal. Zool. Publ. vol. v. no. 9.]

Mr. Grinnell is preparing a revision of the Western Song-Sparrows (*Melospiza*), of which he recognises "seventeen distinct races." Three of these are now described as *M. melodia maxillaris*, *M. m. gouldi* (revived name), and *M. m. saltonis*.

13. *Grinnell on Birds from Alaska.*

[Birds and Mammals of the 1907 Alexander Expedition to South-eastern Alaska. Univ. of Cal. Zool. Publ. vol. iii. no. 2.—Birds by Joseph Grinnell.]

The "Alexander Expedition" of 1907 appears to have been "got up," equipped, and "led" by a lady—Miss Annie M.

Alexander,—for the investigation of the Fauna of the Islands of South-eastern Alaska, and to have been very successfully carried out. The Expedition obtained 532 birds and 33 sets of eggs, besides other objects, all of which have been presented by Miss Alexander to the "Museum of Vertebrate Zoology." The exact localities visited are fully described by Messrs. Stephens and Dixon and are shown on a map of the Sitkan district of Alaska. The birds collected are carefully described by Mr. Grinnell, the Editor of 'The Condor,'—a very competent authority on the Avifauna of the Western States,—and copious field-notes are furnished from the note-books of the Naturalists of the Expedition.

Mr. Grinnell refers the 532 bird-skins to 99 species, amongst which he describes the following as new:—*Lagopus alexandræ, L. dixoni, Buteo borealis alascensis, Picoides americanus fumipectus, Loxia curvirostra sitkensis,* and *Planesticus migratorius caurinus.* The nomenclature and arrangement of the 'Check-list' are followed.

14. *La Touche on the Birds in the Shanghai Museum.*

[The Collection of Birds in the Shanghai Museum. By J. D. D. La Touche. North China Branch R. Asiatic Society, xi. p. 69 (1909).]

The difficulty of keeping up a collection of birds in a tropical climate is very obvious, but that it may be overcome by well-applied energy we may see from Mr. La Touche's report on the Shanghai Museum, of which Institution he has had charge for two years. He found it in a sad state from want of care, but has already renovated it to a great extent, and evidently intends to persevere in his good work. There is a mounted collection of Birds, now brought into good order, and containing 571 specimens of 359 species. The skin-collection contains 1120 specimens of 330 species. The total number of Chinese species represented at Shanghai is about 430. Among the mountain-birds of the province of Fohkien are examples of such rarities as *Drymochares sinensis, Proparus guttaticollis,* and *Allotrius pallidus.* There are also specimens of such little-known birds as

Pteruthius ricketti, *Alcippe hueti*, *Stachyridopsis sinensis*, and *Schœniparus superciliaris*. Amongst recent additions is recorded an example of Gould's Merganser (*Mergus squamatus*), of which there are only three specimens (including the type) in the British Museum, and, we believe, none elsewhere. A complete list of the names of all the species in the Shanghai Museum is given.

15. *Lodge on the Birds of Wild Europe.*

[Bird-hunting through Wild Europe. By R. B. Lodge. London: R. Culley, 1909. Pp. 1-333; 124 illustrations.]

In this book we have no need to descant upon the excellence of the photographs, as Mr. Lodge's skill in this art is well-known to all our readers, but we wish in the present case to call special attention to the scientific aspect of the subject on which he writes, since it is much more prominent than is usual in a popular work. The detailed descriptions of the birds at their breeding-quarters, of their nests and eggs, coupled with an admirable account of the surroundings, and of the countries and peoples visited, is such as to commend itself to every Ornithologist, while the fact that the bird-hunting was indeed in "Wild Europe," and the rarity of many of the species that came under Mr. Lodge's observation, combine to impress us with the scientific value of the letterpress. The difficulties he surmounted can hardly be overrated, yet they were not allowed to interfere with the success that was finally attained, while the list of species at the end of the volume clearly shews how great that success was.

Mr. Lodge first describes a visit to Southern Spain in company with a fellow-member of the B. O. U., easily recognisable under the initial M——; he next gives an account of journeys to Bosnia, Montenegro and Albania, with a short stay, as an interlude, in Hungary; the chief objects of his search being the breeding-places of the Dalmatian Pelican and the Great White Heron, though many other rare species were observed and photographed. Finally, collections were made in the Dobrudscha, at the mouth of the Danube. Success was ultimately obtained in all cases, while Birds-of-Prey and marsh-breeding birds were the most conspicuous companions of the author's travels. No one who wishes to be well acquainted with the habits of European birds, including many rare species on the British list, should neglect to consult this admirable book.

16. *Lönnberg on Birds from Transbaicalia and Mongolia.*

[Notes on Birds collected by Mr. Otto Bamberg in Southern Transbaicalia and Northern Mongolia. By Einar Lönnberg. Upsala and Stockholm, 1909. (Arch. f. Zoologi, Bd. v. no. 9.)]

This is an account of the birds collected by Mr. Bamberg, of Weimar, during an expedition made into Northern Mongolia and the adjoining parts of Transbaicalia, and now deposited, for the most part, in the Museum of Stockholm. It commences with a list of the localities visited, which are illustrated by some nice photographs of the scenery, and explained in descriptive notes. The localities are given in the order in which they were visited, commencing with Kjachta and concluding with Urga. The birds collected by Mr. Bamberg consist of about 90 species and subspecies, and in some cases are of considerable interest, such as *Corvus dauricus neglectus* (*cf.* Salvadori, 'Ibis,' 1909, p. 134), *Garrulus glandarius bambergi* (subsp. nov. of the group of *G. brandti*), *Dendrocopus major mongolus* (subsp. nov.), *Upupa epops saturata* (subsp. nov.), and *Macrorhamphus taczanowskii* (*cf.* Dresser, 'Ibis,' 1909, p. 418), a male specimen of which "in full breeding-plumage" was procured at Bura.

Mr. Lönnberg, we regret to observe, is another advocate for changing old-established names, and wishes to call the Spotted Flycatcher "*Muscicapa ficedula*," as being the *Motacilla ficedula* of Linnæus's tenth edition. But this identification is doubtful, and we prefer *Muscicapa grisola*, which is certain.

17. *Macpherson on the Golden Eagle.*

[The Home-Life of a Golden Eagle. Photographed and described by H. B. Macpherson. London: Witherby & Co., 1909, pp. 1-45, 32 pls. 5*s*. net.]

Mr. Macpherson here gives us an exhaustive and most excellent account of his observations at the eyry of a Golden Eagle in the Grampians. To devote the whole of a book to a single species might seem, at first sight, unnecessary, but on reading the letter-press we are bound to confess that in this case the author has fully justified his action, and that there is not a word which we would willingly have omitted, while our own experiences, so far as they go, exactly tally with his. From April 23rd, when the eggs were hard-set, Mr. Macpherson constantly visited the nest until the young Eagle left it, during a period of no less than eleven weeks, and some idea of the toil involved in the undertaking may be gained from considering the weather that usually prevails—and as a matter of fact did prevail—at that time of year in the corries of the Scottish mountains. The photographs are most successful, and include excellent pictures of the cock, the hen, and the young bird in all stages of growth.

18. *North on* Cinclosoma marginatum.

[Description of the Female with Nest and Eggs of the Cinnamon-chested Ground-Thrush (*Cinclosoma marginatum* Sharpe). By Alfred J. North, C.M.B.O.U. Rec. Austr. Mus. vii. no. 4 (1909).]

The male of *Cinclosoma marginatum* was described by Dr. Bowdler Sharpe in 1883 from a skin obtained in N.W. Australia. Mr. North now describes the female, nest, and eggs obtained by Mr. C. G. Gibson, Assistant Geologist, at Willuna, Western Australia, and adds notes on the range, nesting, and eggs of the species. A photographic plate is given of the nest and eggs.

19. *North on a new* Acanthiza.

[Description of a new Species of *Acanthiza* from Western Australia. By Alfred J. North, C.M.Z.S. Vict. Nat. xxvi. no. 6 (1909).]

In a small collection of birds obtained in the vicinity of

Lake Way, East Morrison District, Western Australia, and sent to him for determination, Mr. North has found three examples of an apparently new species of *Acanthiza,* which he describes under the name *A. whitlocki.*

In the same collection Mr. North found specimens of *Cinclosoma marginatum, Acanthiza robustirostris,* and *Climacteris superciliaris,* all "interesting forms."

20. *Report of the Zoological Society of New York.*

[Thirteenth Annual Report of the New York Zoological Society. New York, 1909.]

As stated on the the titlepage of their Report, the worthy objects of the Zoological Society of New York are to maintain a public zoological park, to preserve the natural Fauna of their country, and to promote Zoology. The readers of the Thirteenth Annual Report will easily settle how far the founders of this great enterprise have carried out these objects. It appears to us that at all events they made very good progress in 1908. Let us see what has been done in the Bird-department, which is ruled by Mr. C. William Beebe—a name well known to many of us.

Mr. Beebe tells us that during the year 1908 the collection of birds in the Zoological Park has increased both in species and specimens. The two most important accessions were from South America and Mexico. Mr. Beebe himself went to Trinidad and Venezuela, and brought home upwards of one hundred specimens, including representatives of sixteen species new to the Collection. A large series, containing Tree-Partridges, Anis, Motmots, Kingfishers, and other rarities, was obtained direct from Mexico. A number of these had never been seen in captivity before, and the study of their habits is yielding facts of great interest.

The Curator maintains that the Collection of living birds at New York is now the first in the world as regards number of specimens, and third in number of species. The authorities in London and Berlin must look to their laurels!

21. *Robinson on a new Flycatcher.*

[On a new Species of *Cyornis* from the Mountains of the Malay Peninsula. By H. C. Robinson. Journ. Fed. Malay States Mus. vol. ii. p. 163 (1909).]

Cyornis peninsularis, described as new in this paper, is allied to *C. oatesi* and *C. vivida*, but is considerably smaller. A male and female were obtained in November 1908 at Telom, on the boundary between Perak and Pahang, Malay States.

22. *Robinson on the Mountain-birds of the Malay Peninsula.*

[The Birds at present known from the Mountains of the Malay Peninsula. By Herbert C. Robinson. Journ. Fed. Malay States Mus. vol. ii. No. 4, p. 164.]

The energetic Director of the Museums of the Federated Malay States now gives us a list of the birds found in the central mountain-zone of the peninsula, where many interesting discoveries have been lately made. His list is based mainly on the very large amount of material now in the Selangor Museum, which, after the elimination of duplicates, contains over 3000 specimens of Malay birds.

Mr. Robinson commences his article with a short description of the various mountains of the Malay Peninsula which have been explored—twelve in all. Although the localities of these ranges are indicated and their approximate heights, which in one case (Gunong Tahang) exceeds 7000 feet, are stated, it would have been better to have added an outline-map shewing their exact positions, as many of them are not marked in ordinary atlases. Next follow the titles of the papers previously published on this subject, which are ten in number. We then come to the List of the Species of the mountains of the Malay Peninsula above the height of 2300 feet, altogether 242 in number, which, with very few exceptions, are represented in the Selangor collection by recently collected specimens of undoubted authenticity.

No new species are described in Mr. Robinson's article, but good field-notes are given in every case, and several very interesting forms are mentioned. *Rheinhardtius nigrescens*, the Malayan representative of the Ocellated Argus of Tonkin, recently described by Dr. Hartert, was obtained by Mr. Robinson on Gunong Tahan, but he does not believe that it is entirely confined to the mountains. Hornbills are numerous—six fine species occur in the Malayan Hills. Woodpeckers are also plentiful—the names of 17 species are recorded. Abundant also are Muscicapidæ and Pycnonotidæ, as in other parts of the Oriental Region. The splendid Hunting-Crow, *Cissa robinsoni*, originally described from a single specimen, is now found to be numerous in the mountains of Selangor, but is "very wild and hard to obtain." The Malayan Bullfinch (*Pyrrhula waterstradti*) probably occurs on all the higher mountains of Selangor, wherever *Vaccinium* and Conifers are found.

A detailed summary concludes Mr. Robinson's valuable paper; it gives full information as to the distribution of the components of the upper Malayan Avifauna, which is compared with that of Kina Balu, the highest summit in Borneo. But the Bornean mountain contains seven peculiar generic forms, while the Malayan heights have none.

23. *Salvadori on some Birds from Congo-land.*

[Piccola Collezione di Uccelli del Congo, descritta da T. Salvadori. Ann. Mus. Civ. Genova, ser. 3, vol. iv. (1909).]

A small collection of birds from Congo-land, received by the Museo Civico of Genoa, contained 30 specimens, which are referred by Count Salvadori to 27 species. Of these *Dendropicus gabonensis*, *Lophoceros granti*, and the very rare *Hypargus dybowskii* are pointed out as being of special interest.

24. *Sassi on Birds from Papua and Northern Queensland.*

[Bemerkungen zu den von E. Weiske in British Neuguinea und Nord Queensland gesammelten Vögelbalgen. Von Dr. Moriz Sassi (Wien). J. f. O., July 1909.]

It would appear that the collection of birds made by

E. Weiske in Papua (British New Guinea) and Northern Queensland from 1895 to 1900 has been purchased by Dr. Steindachner and presented to the Vienna Museum. But we believe that specimens from the same collector had previously gone elsewhere. Dr. Sassi now gives us a list of Weiske's birds and refers them to 45 species. None are described as new, but we see the names of such rare species as *Oreocharis arfaki* and *Paramythia montium* in the list. It would have been better to have kept the Australian birds separate from those of New Guinea.

25. *Shufeldt on the Osteology of Birds.*

[Osteology of Birds. By R. W. Shufeldt. New York State Education Department, Bull. 130. Albany, 1909.]

This 'Bulletin' contains a series of articles by Dr. Shufeldt on Accipitres, Gallinæ, Anseres, and *Coccystes glandarius*, with a bibliography of papers referring to the subject. These have for the most part been separately published in former years, but the illustrations are chiefly new and the subject-matter is worked up afresh. The species treated are chiefly North American, as might be expected; but the volume will be none the less useful on that account to our readers, and evidently forms a fairly complete manual of the Doctor's writings.

26. *'The South African Journal.'*

[The Journal of the South African Ornithologists' Union. Vol. v. No. 2 (Oct. 1909).]

The first paper in this number is by Mr. E. C. Chubb, on birds collected between Bulawayo and the Tegwani River by Mr. R. Douglas. He records *Buteo desertorum* from South Rhodesia for the first time, and gives notes on immature examples of *Numida coronata*. The second paper, which should be studied by those interested in the distribution of South African species, is on birds observed during a journey through Portuguese Nyassa-land in July and August, at an average elevation of some 1500 feet. The writer, Major

J. Stevenson Hamilton, Warden of the Transvaal Game Reserve, found the avifauna similar to that of the Transvaal Low Country, rather than to that of more northern districts. A third paper consists of Notes from Cape Colony by Mr. L. E. Taylor, and includes details of the nesting of various species, such as *Aquila verreauxi* and *Sula capensis*, besides observations on the distribution and capture of rare forms. Next Mr. A. Haagner furnishes us with miscellaneous notes from the Transvaal Museum, among which we may remark that the writer considers *Plectropterus niger* inseparable from *P. gambensis*, while he describes as new *Bradypterus congoensis* from West Pondoland, a form akin to *B. sylvaticus*. Lastly, Mr. F. Pym gives a lengthy catalogue of the birds of the Kaffrarian frontier near Kingwilliamstown.

27. *Spruce on the Migration of the Wood-Ibis.*

[Notes of a Botanist on the Amazon and Andes. By Richard Spruce, Ph.D. Edited by A. R. Wallace. 2 vols. London: Macmillan & Co., 1908.]

Although the late Dr. Spruce's Journals (recently edited by Dr. Wallace) are, of course, mainly devoted to botany, there are occasional references to birds in the narratives of that great traveller and collector. Amongst these is an account of the migration of the Wood-Ibis (*Tantalus loculator*) as observed by Dr. Spruce in several places between the Amazon and Orinoco, which is of such interest that we venture to reproduce it in this Journal:—

"The most remarkable migration that I have myself witnessed in South America is that of the great Wood-Ibis (*Tantalus loculator*), called 'Jabirú' in Brazil, 'Ganáu' in Venezuela, between the Amazon and the Orinoco—a distance of from 300 to 500 miles in a straight line, but a thousand or more following the courses of the rivers. The migrations are so timed that the birds are always on the one river or the other when the water is lowest and there is much sandy beach exposed, affording the greatest extent of fishing-ground. In the years 1853 and 1854, when I was at San Carlos del Rio Negro (lat. 1° 53½′ S.), I saw them going northward in November and returning southward in May, and I had the pleasure of having some of them stay to *dine* with me. One of their halting places on their way to the Orinoco was on islands near the mouth of the Casiquiari, at only a few hours' journey above San Carlos. There I have seen them roosting on the tree-tops in such long close lines that by moonlight the trees seemed clad with white flowers. They descend to the sandy spits of the islands to fish in the grey of the evening and morning, *i. e.* before betaking themselves to their eyrie and before resuming their journey on the following day. The scarcity of fish in rivers of clear or black water is well known; and even were they more abundant, this very clearness of the water would render it difficult for fish-eating fowls to catch them unless when there was little light. Hence, perhaps, the Ibis's choice of hours for fishing; and the turbid water poured into the Rio Negro by the Casiquiari dulls its transparency at that point, which makes it eligible for a fishing station, leaving probably only a single day's stage for the travellers to reach the Orinoco. The Ibises, however, did not, as one might have supposed, turn up the Casiquiari, but held right on to the north, crossing the isthmus of Pimichin, and descending the Atabapo to the Orinoco. Some of them, I was told, would halt on the Guaviare, while others push on to the Apuré; the former lot, however, are said to travel chiefly by way of the Japurá from the Amazon. Those that frequent the Upper Orinoco return in May, and their halting-place near San Carlos is not at the mouth of the Casiquiari, but on the islands a day's journey below the village, so that they are at that season less persecuted by the Indians. If they went all the way down the Rio Negro in May they would reach the Amazon long before its beaches began to be exposed. But it has been ascertained that they sojourn awhile on the Rio Branco, where the beaches are earlier uncovered. Flocks of Wild Ducks sometimes accompany the Ibises, and it is quite possible that some of the smaller aquatic and riparial Fowls make similar migrations.

"When the Ibises are roosting a shot or two from a gun is enough to make the whole caravan take to flight and remove to some distance. But the Indians of San Carlos know better than to scare them away with firearms. They get into their canoes a little after midnight, creep silently up the river, and under cover of the night disembark beneath the trees where the Ibises are roosting. Then, when at break of day the birds wake up and begin to stir, and to be visible, the Indians pick them off with poisoned darts from their blowing-canes in great numbers, before the bulk of the flock takes alarm; so that they mostly return to the villages with great piles of dead Ibises; and, although this lasts only two or three days, the quantity killed is so great that, what with fresh and what with barbecued game, everybody feasts royally for a fortnight; whereas throughout the rest of the year the dearth of provisions exceeds what I have experienced elsewhere in South America."

28. *Whymper's 'Egyptian Birds.'*

[Egyptian Birds, for the most Part seen in the Nile Valley. By Charles Whymper. London: Adam and Charles Black, 1909. 1 vol. 8vo.]

Our associate Mr. Charles Whymper has produced a very nice book, which will, no doubt, be in the hands of many of the visitors who go up the Nile this winter. Selecting fifty of the birds most commonly met with on the banks of the great river, he gives us artistic drawings of them and accompanies them with well-written popular accounts of their habits and manners. As stated by the author in his "Foreword," this does not claim to be a scientific work, "it is meant for the wayfaring man who, travelling through this ancient land, wishes to learn something of the birds he meets with." Mr. Whymper, therefore, does not interfere with the labours of several of our correspondents, who are striving to attain a full knowledge of the Egyptian Avifauna in order to produce a complete account of it.

As will be noticed by those who inspect the volume, most of the fifty species of which figures are given are well known to British ornithologists. But they will be pleased with the dainty figures and brilliant colours—in some cases, we may perhaps say, a little too brilliant.

Among the strange forms introduced to us we may call attention to the Sand-Partridge (*Ammoperdix heyi*), which is a purely desert species. This, as Mr. Whymper says, "is a most charming, lively little bird, bustling about. You rarely see it for long. Even in January it still keeps in coveys, running along in and out of the boulders, and very quick and agile."

It was rather bold of Mr. Whymper to figure the Shoe-bill (*Balæniceps rex*) in a book on Egyptian birds, its true home being far away on the White Nile, but, at all events, we are given correct figures of its grotesque attitudes, taken from the specimens in the Zoological Gardens at Giza.

In concluding the author gives a list of the names of the Egyptian birds known to him—356 in all.

VIII.—*Letters, Extracts, and Notes.*

We have received the following letters, addressed "To the Editors of 'The Ibis'":—

Sirs,—I wish to bring to your notice that a short time ago, in dealing with my specimens of the Mediterranean Falcons (*Falco punicus* and its nearly allied forms), I quoted several books, amongst them the excellent work on the 'Birds of Tunisia,' by the well-known ornithologist Mr. Whitaker, who states that he did not include the Saker (*Hierofalco cherrug*) for Tunisia *.

Afterwards I recollected that amongst the numerous specimens of the Saker in my collection there was one that had been obtained in that country. On searching I found it at once. It is a young specimen which I got, through Mr. Blanc's kindness, about two years ago, and was labelled by him as a "Lanner," October 1907, from Djebel Batteria in North Tunisia.

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* "I have never obtained or heard of the Saker Falcon having been met with in Tunisia, but it may occur there occasionally as a straggler, because examples of it are not unfrequently obtained in Italy, and specimens are to be found in most museums of any importance in that country" (Whitaker, B. of Tunisia, 1905, vol. ii. p. 138).

Its description is as follows:—

Upper parts generally dark brown, some of the feathers slightly shaded with greyish and with pale rufous edges, which are more conspicuous on the feathers of shoulders, rump, and upper tail-coverts; quills dark brown, partly margined with buffy white towards the tip and barred with white on the inner webs; tail greyish brown, middle feathers almost uniform, the lateral ones marked with buffy-white oval spots on the outer web, which are rather more oval on the inner; head and nape buffy white, with blackish central streaks to the feathers; cheek-stripe brown, very conspicuous; chin white; under surface white, with numerous and broad stripes of dark brown, under wing-coverts brown in the centre of the feathers, with broad white margins; cere and legs pale blue-grey; iris brown.

Culmen 32 mm.; wing 390; tail 260; tarsus 60.

I have no doubt as to the identity of the bird, but, in the bibliography quoted, I was unable to find any information relative to the presence of the Saker in Tunisia.

I am, Sirs, yours &c.,
COUNT E. ARRIGONI DEGLI ODDI.

Ca' Oddo (Padua),
October 4th, 1909.

SIRS,—May I be permitted to offer a few remarks on Mr. J. A. Bucknill's interesting paper on the Ornithology of Cyprus in your last number?

The name of the collector who furnished the material for Herr A. Müller's paper in the Journ. f. Ornith. for 1870 (p. 385) is Herr Gustav Schröder. He is still living, but is no longer resident in Cyprus (p. 576).

Mr. Bucknill is mistaken in supposing that the eggs of *Sylvia melanothorax* are still unknown, for Glaszner sent at least two clutches of the eggs of this species, taken in 1906, to the Tring Museum, where I have examined them (p. 598).

The local race of the Tree-Creeper was not described by Dr. Hartert as a subspecies of *C. familiaris,* but under the name of *C. brachydactyla dorotheæ* (not *dorothea*) in the Bull. B. O. C. xiv. p. 50. The Asia Minor form is also a local race of the same species (p. 605).

Mr. Bucknill's supposition that *Motacilla ficedula* of Sibthorp is identical with the British Pied Wagtail is quite untenable. In the first place, Sibthorp's observations were made in 1787 and published in 1818, while the first attempt to describe *M. lugubris* was made by Temminck (who confused it with *M. lugens*) in 1820. Moreover, the British race is very unlikely to occur in Cyprus, as its ordinary migration-route does not come within a thousand miles of the island. One would naturally suppose "*Motacilla ficedula*" to refer to the Pied Flycatcher, but Mr. Bucknill includes that bird also among those identified by Sibthorp (p. 607).

Clifton Vicarage,
Ashburne, Derbyshire,
Nov. 20th, 1909.

Yours &c.,
F. C. R. Jourdain.

Sirs,—In 'The Ibis,' 1909, p. 705, when reviewing Part V. of my book 'Die Vögel der paläarktischen Fauna,' you have objected to my accepting the name *Sylvia borin* for the "Garden-Warbler" and that of *Sylvia hortensis* for the "Orphean Warbler," the latter having been used erroneously for about a century for the "Garden-Warbler."

It is generally acknowledged that we must use the oldest names for all birds, and that erroneously applied names must be changed. This is frequently done by ornithologists in all countries, when writing on foreign and less known birds, and everybody acquiesces in such a proceeding, but when the same practice is followed in the case of "one of our familiar birds," objection is raised. This is, however, inconsistent and unscientific, because the limit between a familiar and an unfamiliar bird cannot be defined, and what is correct in one case must be right in the other.

However, about the necessity of correcting erroneous names commonly used for birds one might differ, and, knowing the views of the reviewer in 'The Ibis,' I should not have taken the pains to write this letter. But the reviewer makes erroneous statements and is therefore apt to mislead those readers who are not in a position to investigate such nomenclatorial questions themselves. The reviewer says that the identification of Boddaert's *Motacilla borin* is uncertain, and that the *Motacilla hortensis* of Gmelin "has been generally supposed to be the Garden-Warbler." These statements are wrong. The case is as follows:—

Motacilla hortensis Gmelin, Syst. Nat. i. 1, p. 955 (1789), is taken from Brisson's and Buffon's description and Daubenton's plate. The description of these authors and the plate of Daubenton shew unmistakably the Orphean Warbler; even Gmelin's abridged diagnosis leaves no doubt about this, especially his description of the tail with the *outer webs of the lateral rectrices white*, a character peculiar to the Orphean Warbler but not found in the Garden-Warbler. The habitat given by Gmelin is France and Italy! Latham and other ornithologists understood this very well, and Latham therefore called the English variety of the bird described by Buffon and Brisson (*i. e.* the Garden-Warbler) *Sylvia simplex*. Unfortunately, however, there is an older name for the Garden-Warbler, namely *Motacilla borin* of Boddaert. This name was given to the "Petite Fauvette" of Buffon and Brisson figured on the plate of Daubenton (Pl. Enl. 579), and referring undoubtedly to the "Garden-Warbler" as distinguished from the "Fauvette," *i. e.* the Orphean Warbler. Moreover, it has *not* generally been supposed that Gmelin's *Motacilla hortensis* is the Garden-Warbler. Seebohm (*cf.* Cat. B. Brit. Mus. v. pp. 11 and xiii) was very well aware of the facts, but he and other ornithologists took quite a singular and high-handed action in calling the Garden-Warbler "*Sylvia hortensis* Bechstein" instead of "*Sylvia hortensis* Gmelin," thus disregarding the principal rule of every code of nomenclature, viz., that a name preoccupied in the same genus cannot be used again.

I think it is unfortunate that my reviewer did not investigate the points in question, but without regard to my careful statements charged me with accepting "uncertain names," a thing of which I disapprove as much as everybody else.

Tring,
November 1909.

Yours &c.,
ERNST HARTERT.

[We may venture to remark that, *in our opinion*, *Motacilla borin* of Boddaert, *is* an uncertain name. Dresser refers it (B. of Europe, ii. p. 383) to the Lesser Whitethroat (*Sylvia curruca*).—EDD.]

SIRS,—I wish to communicate to you the occurrence in Italy of an interesting bird.

On May 10th, 1909, I received from Dr. Cerio, along with other small birds, several Wheatears (*Saxicola*) that had been captured in the island of Capri in the Gulf of Naples. On examining these Wheatears "in the flesh" I was surprised to find amongst them an example of the Desert Wheatear (*Saxicola deserti*) of Rüppell. The specimen is a very fine adult male, in full plumage. It has been sent for examination to Count Arrigoni Degli Oddi, who fully confirms the correctness of my identification.

This is the third record of the occurrence of this "*rara avis*" in Italy. The first was obtained in Sicily in 1891, as recorded by Prof. Giglioli in his 'Avifauna Italica' (p. 130). This specimen is now in the Florence Museum. The second was snared on October 3rd, 1905, near Como in Lombardy (see Martorelli, Uccelli d'Italia, p. 530), and is now in the Museum of Milan; and the third is the present specimen, which is in my collection.

I am well aware that the Desert Wheatear has been obtained in other parts of the continent of Europe on about six occasions, and, what is more surprising, in the British Islands and in Heligoland.

I am, Sirs, yours &c.
CECILIA PICCHI.

20 Via Pandolfina,
Florence, Italy.
November 17th, 1909.

Heel-pads on Young Birds.—It has been pointed out to us that the existence of heel-pads in certain species of birds that nest in hollow trees (see Günther, Ibis, 1890, p. 411, and Stonham, Ibis, 1909, p. 619) was well known to Nitzsch, who described and figured this curious structure in his 'Pterylographie,' p. 134. Taf. v. Nitzsch says (Engl. transl. p. 94):—

"In *Micropogon erythropygos* (i. e, *Trachyphonus margaritatus*) I found on the heel-joint a peculiar circlet of acute tubercles, such as I have also detected in young Wrynecks."

These heel-pads have therefore now been detected in six species of two families, namely:—

PICIDÆ.	CAPITONIDÆ.
Iynx torquilla.	*Cyanops asiatica.*
Gecinus viridis.	*Trachyphonus margaritatus.*
Dendrocopus macei.	
Brachypternus aurantius.	

There can be little doubt, we think, that the use of this peculiar structure is to enable the young birds to ascend the smooth interior of the holes in the trees in which they are hatched. But it would be very desirable that the young of other birds that breed in hollow trees should be examined to ascertain whether they carry heel-pads or any similar organs, and we hope that some of our many correspondents in various parts of the world will turn their attention to this subject and let us know the result.—EDD.

The Lake-Ngami Expedition.—Letters received from Mr. Woosnam, dated October 1st, 1909, announce that the party was still on the banks of Lake Ngami, and was doing well with the fishes of the lake (see 'Ibis,' 1909, p. 719). They had captured a young hippopotamus, and hoped to be able to bring it home. They were just proceeding to form a camp on an island some way out in the marshes in order to explore fresh ground. The birds had been up to that time rather disappointing; hardly any had been seen that had not been previously met with on the Molopo, and the Mopani forests had proved to be extraordinarily birdless.

The party expected to be leaving Lake Ngami about the middle of November, and to travel slowly down the Botletli, arriving home this month *.

The Museum Heineanum.—The celebrated collection of birds at Halberstadt, which was formed in the last century by the late Oberamtmann Ferdinand Heine and is known as the "Museum Heineanum," has been presented by Herr Amtrat F. Heine (the son of the founder) to the City of Halberstadt. The collection is well known from the catalogue of it prepared by Cabanis and Heine, which is constantly quoted by writers on ornithology; it is of great scientific value from the large number of typical specimens which it contains. A special building, adjoining the Civic Museum of Halberstadt, has been prepared for its reception, and the new "Museum Heineanum" was opened to the public with much ceremony on the 23rd of September last (*cf.* Orn. Monatsb., November 1909).

The Food of British Birds.—At the Meeting of the British Association at Dublin in 1908 a committee was appointed, on the recommendation of Sect. D, "to investigate the Feeding-habits of British Birds by a study of the contents of the crops and gizzards of both adults and nestlings, and by the collation of observational evidence, with the object of obtaining precise knowledge as to the economic status of many of our commoner birds affecting rural science" (Rep. B. A. 1908, p. cxxxii). Dr. Shipley, F.R.S., was appointed Chairman and Mr. C. Gordon Hewitt Secretary of the Committee.

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* Since this paragraph was written we regret to say that the expedition has come to an end, in consequence of the ill-health of Mr. Legge, who has returned to England. Mr. Woosnam proposed to remain in the Cape Colony for the present.

The subject is, no doubt, an important one, and, though referred to more or less by all the many writers on British Birds, still requires careful study by skilled enquirers.

The First Report of this Committee was read at the recent meeting of the Association at Winnipeg, in Sect. D. It states that it had been decided to "investigate, first, the feeding-habits of the Rook, Starling, and Chaffinch," and that a body of some thirty correspondents had been organized in all parts of the kingdom to supply specimens to the Secretary along with certain details. Several hundreds of specimens had come in, and the contents of their gizzards had been examined and tabulated.

We fear the Committee has a long and difficult task before it, but wish it success. We venture, however, to recommend them to study what has been already done at Washington, U.S.A., in this branch of enquiry by Dr. Merriam and his staff of assistants in the Agricultural Department; also to make themselves acquainted with the proceedings of Dr. Herman and his fellow-workers in the Officium Hungaricum Ornithologicum at Budapest.

The Fifth International Ornithological Congress.—We have received a formal announcement (signed by Prof. Dr. Ant. Reichenow and Dr. L. Brühl) that, in accordance with the arrangements recommended at the Fourth Meeting held in London in 1905 (see 'Ibis,' 1905, p. 627), the Fifth Meeting of the International Ornithological Congress will be held at Berlin from May 30th to June 4th, 1910, with Prof. Reichenow as President and Dr. Brühl as General Secretary. We trust that many British ornithologists will be able to avail themselves of this excellent opportunity of visiting one of the finest cities in Europe and of meeting their brethren in science assembled from all parts of the world. We can assure them that they will receive a hearty welcome and learn much that is new to them.

The B.O.U. Expedition for the Exploration of Central New Guinea.—We are glad to say that letters have been received from several members of our New-Guinea Expedition giving good accounts of its progress so far*. Messrs. Goodfellow, Wollaston, Rawlings, and Marshall, who left Marseilles in the P. & O. S.S. 'Marmora' on the 29th of October, arrived at Singapore on November 20th, and at Batavia nine days later. They were to start in a few days for Dobbo, a much frequented trade-centre in the Aru Islands, well known in former days to Mr. Wallace. Mr. Shortridge, just returned from a short expedition to Kangean Island, had joined them at Batavia. Mr. Stalker, who had been in Ceram, would either come to Batavia too, or go on direct to the Ké Islands for the purpose of hiring native carriers, who are usually to be met with there.

The party hoped to be able to land at the selected spot on the south coast of New Guinea early in this month.

News of Mr. Bates.—Our excellent correspondent, Mr. Geo. L. Bates, seems to be now quietly settled at Bitye, in Southern Kamerun (see map, 'Ibis,' 1908, p. 558), where he has a "rubber plantation" and collects birds. Writing on October 21st, he says he is paying special attention to nestlings and is sure there is much to be learned from their study, in which we quite agree with him. He wishes to exchange specimens with a Naturalist living in some adjoining locality on the West Coast, so as to extend his knowledge of West African Birds. Mr. Bates has recently described three new species in the Bulletin of the B. O. U. (xxv. pp. 26–28) as *Melignomon robustus, Parisoma holospodium,* and *Pedilorhynchus brevirostris.*

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* *Cf.* 'The Ibis,' 1909, p. 715.

The Birds of Gambia.—In 1901 we published in this Journal an excellent article on the Birds of the Gambia Colony drawn up by the late John S. Budgett ('Ibis,' 1901, p. 481). Since then little ornithological news from the Gambia has reached us. But we are pleased to see that in 'Bird-Notes,' the Journal of the "Foreign Bird-Club," edited by Mr. Wesley L. Page, Dr. E. Hopkinson, D.S.O., has commenced a series of papers on the "Birds of Gambia," with which he seems to have a good acquaintance from personal observation (see 'Bird-Notes,' vol. viii. nos. 1–9). Dr. Hopkinson begins with the Weavers, Finches, and Starlings, and then goes on to other Passerine groups, giving many interesting field-notes. Of the Great Black Ox-bird of Senegal (*Textor albirostris*) he writes :—

"Their nests are very striking; large masses of twigs occupied by several families, whose eggs are laid at the bottom of tunnels driven into the mass of twigs which form the nest. Whenever I have seen their nests they have been in large trees growing in certain villages, never outside in the bush. Sometimes in the upper part of a large cotton-tree are found Marabout Storks nesting, while lower down are the dwellings of the Ox-birds; the latter, although belonging to comparatively small birds, being larger and stronger than those of the great Storks above them.

"The hen of the Ox-bird is exactly like the cock, but the colour of the young is a rusty brown."—Edd.

THE IBIS.

NINTH SERIES.

No. XIV. APRIL 1910.

IX.—*On the Birds of Northern Rhodesia and the Katang District of Congoland.*—Part II. By S. A. Neave, M.A., B.Sc. Oxon., F.Z.S., M.B.O.U.*

(Plate III. and Text-fig. 3.)

Fam. Prionopidæ.

257. **Prionops talacoma.**

Prionops talacoma Smith; Neave, Memoirs & Proc. of the Manchester Lit. & Phil. Society, vol. 51, pt. iii. p. 70.

No. 78. ♂. Near Kambove, 4000 ft., March 10, 1907.

Bill black; feet salmon-orange; iris and wattles bright sulphur-yellow.

This bird is common everywhere in the woodland in parties of six or seven.

258. **Sigmodus tricolor.**

Sigmodus tricolor (Gray); Neave, loc. cit. p. 71.

No. 93. ♀ ad. Dikulwe R., 4000 ft., March 16, 1907.

Bill crimson-scarlet, distal half orange-yellow; feet scarlet; iris bright orange; wattle red.

No. 94. ♂ juv. Dikulwe R., March 16, 1907.

Bill brownish orange, tinted with dusky at tip; feet orange; iris pale brown.

No. 614. ♂. Luwingu, N. of L. Bangweolo, July 19, 1908.

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* Continued from p. 155.

Bill red, tipped with orange; feet orange-scarlet; iris orange; orbit red.

This species closely resembles *Prionops talacoma* in its habits, but is much less common.

Fam. LANIIDÆ.

259. LANIUS MINOR.

Lanius minor Gm.; Neave, loc. cit. p. 72.

No. 404. Lufupa R., 4000 ft., Oct. 16, 1907.

Bill black, greyish at base; feet black; iris dark brown.

This bird is to be seen every year, about October, in the more open parts of the country.

260. FISCUS COLLARIS.

Fiscus collaris (L.); Sharpe, Hand-l. Birds, iv. p. 284.

Lanius collaris Reich. Vög. Afr. ii. p. 607.

No. 244. ♂. Upper Lufira R., 3600 ft., June 20, 1907.

Bill and feet black; iris brown.

No. 704. ♂. Kalungwisi R., Sept. 8, 1908.

Bill and feet black; iris dark brown.

No. 767. ♀. E. of L. Bangweolo, Oct. 12, 1908.

Bill and feet black; iris dark brown.

Not uncommon in the more open parts of the high plateau. It usually sits on the top of isolated bushes, and is rather wary and difficult to approach.

261. ENNEOCTONUS COLLURIO.

Enneoctonus collurio (L.); Neave, loc. cit. p. 72.

No. 411. ♂. Lufupa R., 4000 ft., Oct. 26, 1907.

Bill brownish horn-coloured, lower mandible whitish, tipped brown; feet dark olive-grey; iris brown.

No. 427. ♂? Lufupa R., 4000 ft., Oct. 31, 1907.

Bill black, base of lower mandible whitish; feet dusky; iris brown.

This bird appears simultaneously with *Lanius minor* and frequents the same open country.

262. CHLOROPHONEUS NIGRIFRONS.

Chlorophoneus nigrifrons Reich. Orn. MB. iv. p. 95 (1896); Vög. Afr. ii. p. 560.

No. 43. ♀. Kambove, 4500 ft., Feb. 21, 1907.

Bill black; feet lead-coloured; iris red.

The only specimen seen. Shot in dense forest.

263. CHLOROPHONEUS CHRYSOGASTER.

Chlorophoneus chrysogaster (Swains.); Neave, loc. cit. p. 73.

No. 44. ♀. Kambove, 4500 ft., Feb. 21, 1907.

Bill black; feet lead-coloured; iris hazel.

No. 402. ♂. Near Lufupa R., 4000 ft., Oct. 14, 1907.

Bill black; feet dark slate-coloured; iris dark reddish brown.

No. 532. ♂. Chambezi R., May 11, 1908.

Bill black; feet blue-grey; iris purplish brown.

This bird is comparatively uncommon in the high plateau country, much more so in low ground such as in the Luangwa Valley. It is usually to be seen hunting for insects among the thickets on streams, banks, &c.

264. DRYOSCOPUS CUBLA HAMATUS.

Dryoscopus cubla hamatus Reich.; Reich. Vög. Afr. ii. p. 594.

Dryoscopus hamatus Neave, loc. cit. p. 73.

No. 42. ♂. Kambove, 4500 ft., Feb. 21, 1907.

Bill black; feet lead-coloured; iris red.

No. 167. ♀. Lualaba R., 2500 ft., May 3, 1907.

Bill black; feet lead-coloured; iris orange-red.

No. 415. ♂. Lufupa R., 4000 ft., Oct. 28, 1907.

Bill black; feet dark slate-coloured; iris orange-red.

No. 461. Petauke, Luangwa Valley, 2400 ft., Jan. 10, 1908.

Bill dusky, greyish below; feet blue-grey; iris orange-scarlet.

No. 483. ♂. Upper Luangwa Valley, 2500 ft., March 16, 1908.

Bill black; feet lead-coloured; iris red.

Everywhere a common bird, occurring in every "bird-party," less often singly.

265. Dryoscopus mossambicus.

Dryoscopus mossambicus Fischer & Reichen.; Neave, loc. cit. p. 74.

No. 79. ♂. Near Kambove, 4000 ft., March 11, 1907.

Bill black; feet lead-coloured; iris brown.

No. 314. ♂. Bunkeya R., 3000 ft., Aug. 8, 1907.

Bill black; feet dark slate-coloured; iris dark brown.

No. 529. ♂. Chambezi R., May 8, 1908.

Bill black; feet greenish grey; iris reddish brown.

A common bird in thickets &c. on stream-banks, but much more often heard than seen.

266. Nicator chloris.

Nicator chloris (Linn.); Reich. loc. cit. ii. p. 554.

Nos. 168, 169. ♂ & ♀. Lualaba R, 2500 ft., May 4, 1907.

Bill black; feet dusky grey; iris brown.

I only met with this pair of birds, which were in some dense bush. They appeared to have considerable variety of notes, uttering at one time a highly ventriloquial clucking sound, at others an apparently scornful laughing note.

267. Pomatorhynchus senegalus.

Pomatorhynchus senegalus (L.); Neave, loc. cit. p. 75.

No. 2. ♂. Near Kapopo, Upper Kafue, 4000 ft., Jan. 10, 1907.

Bill black; feet greyish; iris purplish grey.

No. 84. ♂. Dikulwe R., 4000 ft., March 15, 1907.

Bill black; feet pale bluish grey; iris violet.

No. 801. ♀. Valley of Mansya R., Mpika Plateau, Oct. 29, 1908.

Bill black; feet pale grey; iris violet.

Not uncommon in pairs throughout the woodland country.

268. Pomatorhynchus australis congener.

Pomatorhynchus australis congener Reich. J. f. O. 1902, p. 258; loc. cit. ii. p. 546.

No. 117. ♀. Dikulwe R., 4000 ft., March 28, 1907.

Bill black; feet pale blue-grey; iris reddish brown.

No. 200. ♀. Upper Lualaba, 3500 ft., May 21, 1907.

Bill black; feet pale bluish grey; iris brownish purple.

This bird resembles the preceding in its habits, but is much less common.

269. POMATORHYNCHUS ANCHIETÆ.

Pomatorhynchus anchietæ (Bocage); Reich. loc. cit. ii. p. 553.

No. 35. ♀. Kambove, 4500 ft., Feb. 16, 1907.

Bill dusky horn-coloured, greyish below; feet olive-slate-coloured; iris olive-brown.

No. 54. ♂ breeding. Kambove, Feb. 23, 1907.

Bill black; feet dusky grey; iris amethyst-pink.

No. 55. ♂ imm. Kambove, Feb. 23, 1907.

Bill brownish horn-coloured, paler below; feet dark grey; iris pinkish brown.

No. 393. ♂ ad. Lufupa R., 4000 ft., Oct. 12, 1907.

Bill black; feet greenish grey; iris salmon-pink.

This bird differs somewhat in its habits from other species of the genus. It usually frequents long grass on the edges of patches of forest. It utters from time to time a few notes of a singularly sweet tone.

270. NILAUS NIGRITEMPORALIS.

Nilaus nigritemporalis Reich.; Neave, loc. cit. p. 76.

No. 516. ♂. Chambezi Valley, 4000 ft., May 1, 1908.

Bill black; base of lower mandible blue-grey; feet olive-grey; iris dark brown.

This seems a rare bird. The few individuals that I have seen formed members of a "bird-party," and were silently hunting through the trees for insects.

Fam. PARIDÆ.

271. PARUS NIGER.

Parus niger Vieill.; Neave, loc. cit. p. 76.

No. 484. ♂. Upper Luangwa Valley, 2500 ft., March 17, 1908.

Bill and feet black; iris dark brown.

No. 485. ♂. Upper Luangwa Valley, March 27, 1908.

Bill and feet bluish slate-coloured; iris dark brown.

This bird is common in the Luangwa Valley. It appears to be replaced on the High Plateau west of the Mchinga Escarpment by *P. insignis.*

272. PARUS INSIGNIS.

Parus insignis Cab.; Sharpe, Hand-l. Birds, iv. p. 331.

Parus niger insignis Reich. loc. cit. iii. p. 512.

No. 13. ♂. Kambove, 4500 ft., Feb. 9, 1907.

Bill and feet black; iris very dark brown.

No. 403. ♂. Lufupa R., 4000 ft., Oct. 14, 1907.

Bill and feet black; iris dark brown.

No. 722. ♂. Kalungwisi R., Sept. 14, 1908.

Bill and feet black; iris brown.

This species is not uncommon on the High Plateau. It is not so frequently seen forming one of a "bird-party" as most of its allies.

273. PARUS RUFIVENTRIS.

Parus rufiventris Boc.; Reich. loc. cit. iii. p. 514.

Parus masukuensis Neave, loc. cit. p. 76.

No. 119. ♂. Dikulwe R., 3500 ft., March 28, 1907.

Bill black; feet bluish slate-coloured; iris grey.

No. 386. ♂. Lulua Post, Upper Lufupa R., 4500 ft., Oct. 5, 1907.

Bill black; feet lead-coloured; iris sulphur-yellow.

No. 420. ♀. Lufupa R., 4000 ft., Oct. 30, 1907.

Bill black; feet bluish grey; iris dark olive-grey.

No. 526. ♂. Chambezi R., 4000 ft., May 7, 1908.

Bill black; feet bluish grey; iris pale yellow, outwardly brownish.

This bird is not at all uncommon. I once met with a family of five individuals, but it more usually occurs singly or in pairs forming members of a "bird-party."

274. PARUS PARVIROSTRIS.

Parus parvirostris Shell.; Neave, loc. cit. p. 77.

No. 29. ♂. Kambove, 4000 ft., Feb. 14, 1907.

Bill black ; feet leaden grey ; iris dark brown.

No. 545. ♀. Upper Luansenshi R., north-east of Lake Bangweolo, June 2, 1908.

Bill black ; feet bluish slate-coloured ; iris brown.

275. ANTHOSCOPUS PARVULUS.

Anthoscopus parvulus Heugl. ; Reich. loc. cit. iii. p. 528.

No. 641. ♂. Lofu R., Tanganyika Plateau, Aug. 6, 1908.

Bill greyish horn-coloured ; feet dark slate-coloured ; iris brown.

I met with a small party of these birds on one occasion only. They were hunting for insects through the woodland in company with some White-eyes.

Fam. CERTHIIDÆ.

276. SALPORNIS SALVADORII.

Salpornis salvadorii (Boc.) ; Reich. loc. cit. iii. p. 507.

No. 5. ♀, not breeding. Kansanshi, N.W. Rhodesia, 4500 ft., Jan. 28, 1907.

Bill dusky horn-coloured, paler below ; feet dusky brown ; iris dark brown.

No. 21. ♂ ad. Kambove, 4500 ft., Feb. 11, 1907.

Bill dusky, paler below ; feet dark brownish ; iris dusky brown.

No. 199. ♀ ad. Upper Lualaba R., 3500 ft., May 21, 1907.

Bill brownish horn-coloured, paler below ; feet brown ; iris brown.

This bird is by no means uncommon in the woodland of High Plateau country. Singly or in pairs, it almost invariably forms one of a bird-party. It creeps actively about the trunks, searching for insects in the bark. It has a flight rather like that of a Woodpecker.

Fam. ZOSTEROPIDÆ.

277. ZOSTEROPS ANDERSSONI.

Zosterops anderssoni Shell. ; Neave, loc. cit. p. 77.

No. 8. ♀. Kansanshi to Kambove, Feb. 1, 1907.

Bill blackish, base of lower mandible paler; feet pale slate-coloured; iris red-brown.

No. 564. ♂. Luwingu, June 10, 1908.

Bill dusky, base of lower mandible bluish grey; feet pale grey; iris brown.

No. 520. ♀. Chambezi R., May 5, 1908.

Bill dusky, base of lower mandible bluish grey; feet bluish slate-coloured; iris brown.

No. 683. ♂. Lofu Valley, Aug. 26, 1908.

Bill black, base of lower mandible bluish grey; feet pale grey; iris brown.

278. ZOSTEROPS VIRENS.

Zosterops virens Sundev.; Reich. loc. cit. iii. p. 430.

No. 344. ♀. Bunkeya, 3000 ft., Aug. 31, 1907.

Bill dusky, base of lower mandible paler; feet grey; iris yellow-brown.

No. 432. ♀. Lufupa R., 3500 ft., Nov. 4, 1907.

Bill black, base of lower mandible grey; feet silver-grey; tarsi olive-grey; iris brown.

No. 677. ♂. Kamboe, S. of Lake Tanganyika, Aug. 21, 1908.

Bill black; feet bluish grey; iris brown.

Fam. NECTARINIIDÆ.

279. CINNYRIS CUPREUS.

Cinnyris cupreus (Shaw); Neave, loc. cit. p. 77.

No. 370. ♂ juv. Plateau between Dikulwe and Lualaba R., 4000 ft., Sept. 24, 1907.

Bill black; feet black; iris dark brown.

No. 392. ♂ juv. Lufupa R., 4000 ft., Oct. 11, 1907.

Bill black; feet black; iris dark brown.

No. 398. ♂ ad. Lufupa R., Oct. 12, 1907.

Bill black; feet black; iris dark brown.

No. 799. ♂ ad. Mpika Plateau, Oct. 27, 1908.

Bill and feet black; iris dark brown.

This is one of the most frequent of the larger Sun-birds. As is the case with other Sun-birds, I think that there can be no doubt that this bird, having once acquired its breeding-plumage, never again loses it, and that birds in partial breeding-plumage are merely immature.

280. CINNYRIS MICRORHYNCHUS.

Cinnyris microrhynchus Shell.; Neave, loc. cit. p. 78.

No. 226. ♂ juv. Upper Lufira R., 3500 ft., June 12, 1907.

Bill and feet black; iris dark brown.

281. CINNYRIS LEUCOGASTER.

Cinnyris leucogaster Vieill.; Neave, loc. cit. p. 79.

I only met with this species in the Luangwa Valley.

282. CINNYRIS FALKENSTEINI.

Cinnyris falkensteini Fischer & Reich.; Neave, loc. cit. p. 79.

No. 60. ♂ ad. Kambove, 4500 ft., Feb. 25, 1907.

Bill and feet black; iris dark brown.

No. 275. ♂ ad. Kambove, July 9, 1907.

Bill and feet black; iris dark brown.

No. 493. ♂ ad. Chambezi Valley, 4000 ft., April 12, 1908.

Bill and feet black; iris dark brown.

No. 599. ♂ ad. Chirui Isl., L. Bangweolo, July 5, 1908.

Nos. 654, 656. ♂ ♂ ♂. Lofu R., Aug. 10, 12, 1908.

Bill and feet black; iris dark brown.

No. 676. ♂. Lofu R., Aug. 17, 1908.

Bill and feet black; iris dark brown.

No. 763. ♀. E. of L. Bangweolo, Oct. 9, 1908.

Bill and feet black; iris dark brown.

A common High Plateau species.

283. CINNYRIS LUDOVICENSIS.

Cinnyris ludovicensis (Bocage); Reich. loc. cit. iii. p. 489.

No. 219. ♂ ad. Upper Lualaba R., 3800 ft., May 30, 1907.

Bill black; feet black; iris dark brown.

No. 224. ♀. Upper Lualaba R., May 31, 1907.

Bill and feet black; iris dark brown.

No. 804. ♂. Lake Young, Oct. 31, 1908.

Bill and feet black; iris brown.

A rather scarce species, only met with in woodland.

284. CHALCOMITRA GUTTURALIS.

Chalcomitra gutturalis (L.); Neave, loc. cit. p. 79.

No. 218. ♂. Upper Lualaba, 3600 ft., May 30, 1907.

Bill black; feet black; iris dark brown.

This bird, though not rare, is less common in the High Plateau than in the Luangwa Valley, where it is abundant. It is a very pugnacious bird, and I have frequently seen it bullying smaller species, such as *Anthothreptes hypodila.*

285. CHALCOMITRA DEMINUTA.

Chalcomitra deminuta Cab.; Neave, loc. cit. p. 80.

No. 41. ♂. Kambove, 4500 ft., Feb. 20, 1907.

Bill black; feet black; iris dark brown.

No. 123. ♂. Dikulwe R., 4000 ft., March 30, 1907.

Bill black; feet black; iris dark brown.

No. 164. ♂ imm. Lualaba R., 2500 ft., May 2, 1907.

Bill black; feet black; iris dark brown.

No. 261. ♂. Kambove, 4500 ft., July 1, 1907.

Bill black; feet black; iris dark brown.

No. 533. ♂ juv. Chambezi R., May 12, 1908.

Bill and feet black; iris dark brown.

Nos. 610, 623. ♀ ♂. Luwingu, July 17, 22, 1908.

Bill and feet black; iris brown.

No. 626. ♀. Upper Kalungwisi, July 27, 1908.

Bill and feet black; iris dark brown.

No. 658. ♂ juv. Lofu R., Aug. 10, 1908.

Bill and feet black; iris brown.

Nos. 693, 697. ♂ ♀ ad. Kalungwisi Valley, Sept. 4, 5, 1908.

Bill and feet black; iris dark brown.

286. CHALCOMITRA KIRKI.

Chalcomitra kirki (Shell.); Sharpe, Hand-l. Birds, v. p. 51.

No. 322. ♂. Bunkeya R., 3000 ft., Aug. 14, 1907.

Bill black; feet black; iris dusky.

No. 469. ♀. Luangwa Valley, 2000 ft., Feb. 26, 1908.

Bill and feet black; iris dark brown.

No. 753. ♂ juv. Luwingu, Sept. 26, 1908.

Bill and feet black; iris dark brown.

287. CHALCOMITRA OBSCURA.

Chalcomitra obscura (Jard.); Neave, loc. cit. p. 80.

No. 382. ♂. Upper Lufupa R., 4000 ft., Oct. 2, 1907.

Bill black, basal third of lower mandible brownish yellow; feet dark brown; iris dark brown.

No. 431. ♂. Lufupa R., 3500 ft., Nov. 3, 1907.

Bill black, yellowish gape; feet black; iris dark brown.

Nos. 651, 655, 669. ♂ ♂ ♂. Lofu R., Aug. 9, 10, 15, 1908.

Bill and feet black; iris dark brown.

This is another forest-species, frequently found in company with *C. verticalis*.

288. CYANOMITRA VERTICALIS.

Cyanomitra verticalis (Lath.); Sharpe, Hand-l. Birds, v. p. 54.

No. 368. ♂. Plateau between Dikulwe and Lualaba, 4000 ft., Sept. 24, 1907.

Bill black; feet black; iris dull reddish brown.

No. 379. ♂. Upper Lufupa R., 4000 ft., Oct. 2, 1907.

Bill black; feet black; iris dull reddish brown.

No. 559. ♂. Luwingu, June 9, 1908.

Bill and feet black; iris dark brown.

No. 616. ♂. Luwingu, July 19, 1908.

Bill and feet black; iris brown.

No. 624. ♀. Chimpili Hills, July 25, 1908.

Bill and feet black; iris brown.

No. 552. ♂ juv. Luwingu, June 8, 1908.

Bill dusky, gape yellow; feet black; iris dark brown.

No. 634. ♀. Mporokoso, July 31, 1908.

Bill and feet black; iris dark brown.

No. 824. ♀. Mansya R., L. Young, Nov. 5, 1908.

Bill and feet black; iris dark brown.

This is essentially a forest-species, being not uncommon in "Msitu." It does not, so far as I know, occur east of the Mchinga Escarpment. It has a curious mewing note, constantly repeated.

289. ANTHOTHREPTES LONGUEMARII.

Anthothreptes longuemarei (Less.); Neave, loc. cit. p. 81.

No. 155. ♂. S. Kaluli R., Lualaba R., 2500 ft., April 27, 1907.

Bill dusky brown; feet black; iris dark brown.

No. 399. ♂. Lufupa R., 4000 ft., Oct. 13, 1907.

Bill black; feet black; iris dark brown.

No. 513. ♂. Champezi Valley, 4000 ft., April 30, 1908.

Bill black; feet black; iris dark brown.

No. 561. ♂. Luwingu, June 9, 1908.

Bill dusky; feet black; iris dark brown.

This bird occurs sparingly throughout the High Plateau country. It is usually in small parties.

290. ANTHOTHREPTES HYPODILA.

Anthothreptes hypodila (Jard.); Neave, loc. cit. p. 81.

No. 225. ♀. Kambove, 4000 ft., June 10, 1907.

Bill black; feet black; iris dark brown.

No. 631. ♂. Upper Kalungwisi R., July 29, 1908.

Bill and feet black; iris dark brown.

Nos. 674, 675. ♂ ♀. Lofu R., Aug. 17, 1908.

Bill and feet black; iris dark brown.

No. 682. ♂. Lofu R., Aug. 24, 1908.

Bill and feet black; iris dark brown.

Common everywhere, especially in low-lying river-valleys.

291. ANTHOTHREPTES ANCHIETÆ.

Anthothreptes anchietæ (Bocage); Reich. loc. cit. iii. p. 442.

No. 492. ♂. Chambezi Valley, 4000 ft., April 11, 1908.

Bill black; feet black; iris dark brown.

No. 494. ♂. Chambezi Valley, April 12, 1908.

Bill black; feet black; iris dark brown.

No. 524. ♀. Chambezi R., May 6, 1908.

Bill black; feet black; iris dark brown.

This bird occurs sparingly in pairs or small parties throughout the High Plateau. I also saw an individual on my first expedition in November, 1905, in the Southern Serenje district.

Fam. MOTACILLIDÆ.

292. MOTACILLA VIDUA.

Motacilla vidua Sundev.; Neave, loc. cit. p. 82.

No. 248. ♂. Upper Lufira R., 3500 ft., June 21, 1907.

Bill black; feet black; iris dark brown.

Ubiquitous and very tame.

293. MOTACILLA CLARA.

Motacilla clara Sharpe, Hand-l. Birds, v. p. 140.

Motacilla longicauda Reich. loc. cit. iii. p. 301.

No. 428. ♀. Lufupa R., 3500 ft., Nov. 1, 1907.

Bill black; feet pale pinkish grey; iris brown.

Only observed in the rocky bed of a small tributary of the Lufupa R. It seems rather a shy bird.

294. MOTACILLA CAMPESTRIS.

Motacilla campestris Pall.; Neave, loc. cit. p. 82.

Ray's Wagtail occurs during the rainy season in the Luangwa Valley. I did not observe it on the High Plateau, west of the Mchinga Escarpment.

295. MOTACILLA FLAVA.

Motacilla flava L.; Sharpe, Hand-l. Birds, v. p. 142.

Budytes flavus Reich. loc. cit. p. 303.

No. 594. ♂. L. Bangweolo, July 5, 1908.

Bill and feet black; iris brown.

296. MOTACILLA BOREALIS.

Motacilla borealis Sundev.; Sharpe, Hand-l. Birds, v. p. 143.

Budytes borealis Reich. loc. cit. iii. p. 304.

No. 149. ♂. Mazanguli, Lualaba Valley, 2700 ft., April 23, 1907.

Bill black, lower mandible white, tipped with black; feet dusky; iris brown.

297. Anthus trivialis.

Anthus trivialis (L.); Reich. loc. cit. iii. p. 311.

No. 38. ♀. Kambove, 4500 ft., Feb. 17, 1907.

Bill dusky brown, whitish below; feet pinkish brown; iris brown.

No. 68. ♂. Kambove, 4500 ft., Feb. 28, 1907.

Bill dark brown, paler below; feet pale pinkish brown; iris brown.

No. 454. ♂. Serenje, N.E. Rhodesia, Dec. 20, 1907.

Bill brown, below brownish flesh-coloured, tipped brown; feet pale brownish flesh-coloured; iris brown.

Not uncommon in the rainy season.

298. Anthus leucophrys.

Anthus leucophrys Vieill.; Neave, loc. cit. p. 83.

No. 205. ♂. Upper Lualaba R., 3500 ft., May 22, 1907.

Bill brownish horn-coloured; lower mandible yellow.

No. 323. ♂. Bunkeya R., 3000 ft., Aug. 15, 1907.

Bill brown, lower mandible yellow, tipped with brown; gape yellow; feet pale yellowish; iris brown.

No. 324. ♀. Bunkeya R., Aug. 15, 1907.

Bill brown, lower mandible yellow, tipped with brown; gape yellow; legs pale yellowish, feet darker; iris brown.

No. 400. ♂. Lufupa R., 4000 ft., Oct. 13, 1907.

Bill horn-brown, paler below; feet pale brownish, tarsi paler; iris dark brown.

No. 401. ♀. Lufupa R., Oct. 13, 1907.

Bill horn-brown, paler below.

No. 525. ♀. Chambezi R., 4000 ft., May 6, 1908.

Bill horn-brown, base of lower mandible yellow; feet yellowish brown, tarsi paler; iris brown.

No. 541. ♀. Luena, E. of L. Bangweolo, May 28, 1908.

Bill brown, base of lower mandible and gape yellow; feet brownish yellow; tarsi yellow; iris brown.

A common species everywhere in the open country.

299. ANTHUS NICHOLSONI.

Anthus nicholsoni Sharpe; Neave, loc. cit. p. 83.

The range of this bird does not appear to extend north of the Congo-Zambezi watershed—on the western side, at least.

300. ANTHUS RUFULUS.

Anthus rufulus Vieill.; Sharpe, Hand-l. Birds, v. p. 148.

No. 141. ♂. High Plateau between Dikulwe and Lualaba, 5500 ft., April 11, 1907.

Bill dusky brown, pinkish tipped with dusky below.

No. 434. ♂. Ruwe, 4500 ft., Nov. 7, 1907.

Bill brownish horn-coloured; feet dull orange-yellow; iris brown.

No. 586. ♀. Chishi Island, L. Bangweolo, June 24, 1908.

Bill horn-brown, basal half of lower mandible pinkish; feet pale pinkish brown; iris brown.

No. 710. ♂. Kalungwisi R., Sept. 9, 1908.

Bill dark brownish above, yellow tipped with brown below; feet dirty yellow, tarsi paler; iris dark brown.

No. 820. ♂ juv. Mansya R., L. Young, Nov. 8, 1908.

Bill brownish horn-coloured, paler below; feet brownish flesh-coloured; iris brown.

This bird is not specially confined to open country, as it perches a good deal on trees, and I have seen individuals in comparatively dense woodland.

301. MACRONYX ASCENSI.

Macronyx ascensi Salvad.; Sharpe, Hand-l. Birds, v. p. 153.

No. 188. ♂. Upper Lualaba R., 3400 ft., May 16, 1907.

Bill dark brown; lower mandible bluish horn-coloured, tipped with dusky; feet and legs reddish brown; iris dark brown.

No. 549. ♂. Upper Luansenshi R., L. Bangweolo, June 3, 1908.

Bill: upper mandible and tip of lower mandible black, rest of lower mandible bluish grey; feet pale yellowish brown; iris brown.

Not uncommon in pairs throughout the more open parts of the High Plateau.

302. MACRONYX WINTONI.

Macronyx wintoni Sharpe; Reich. loc. cit. iii. p. 325.

No. 701. ♀. Kalungwisi R., 4000 ft., Sept. 7, 1908.

Bill brownish horn-coloured, lower mandible whitish; feet and tarsi brownish flesh-coloured; iris brown.

Nos. 733, 734. ♀ ♂. Chisinga Plateau, Kalungwisi district, 4200 ft., Sept. 19, 1908.

Bill brownish horn-coloured, gape and lower mandible whitish; feet pale pinkish brown; iris dark brown.

Nos. 741, 742, 743. ♂ ♀ ♀. Chisinga Plateau, Sept. 20, 1908.

Bill brownish horn-coloured, paler below; feet pale brownish; iris dark brown.

No. 805. ♂. Near L. Young, Mansya R., Nov. 1, 1908.

Bill brownish horn-coloured, paler below; feet brown; iris brown.

I found this beautiful Long-claw not uncommon on the large open plains near L. Mweru and again near L. Young. It never seems to perch on trees as *M. ascensi* does.

Fam. ALAUDIDÆ.

303. TEPHROCORYS CINEREA.

Tephrocorys cinerea (Gm.); Sharpe, Hand-l. Birds, v. p. 164.

Calandrella cinerea Reich. loc. cit. iii. p. 377.

No. 202. ♂. Upper Lualaba, 3500 ft., May 21, 1907.

Bill dusky brown, pinkish at base of lower mandible; feet brown; iris brown.

No. 206. ♀. Upper Lualaba, May 22, 1907.

Bill yellowish brown, lower mandible yellow, darker tip; feet pale reddish brown; iris brown.

No. 373. ♂. Plateau between Dikulwe and Lualaba Rivers, 4000 ft.

Bill, tip dusky, base pale whitish; feet greyish flesh-coloured; tarsi flesh-coloured; iris brown.

I found this Lark in large flocks on the Upper Lualaba, but did not meet with it elsewhere.

304. MIRAFRA FISCHERI.

Mirafra fischeri (Reich.); Reich. loc. cit. iii. p. 339.

No. 531. ♂. Chambezi R., May 11, 1908.

Bill blackish above, whitish below; feet and tarsi flesh-coloured; iris golden brown.

No. 535. ♂. Chambezi R., May 11, 1908.

Bill brownish horn-coloured above, whitish below; feet pale flesh-coloured; iris brown.

I met with this bird sparingly on open spaces on the Upper Chambezi River, but did not observe it elsewhere.

305. MIRAFRA NIGRICANS.

Mirafra nigricans (Sundev.); Neave, loc. cit. p. 84.

No. 174. ♂. Busanga, Lualaba R., 2800 ft., May 9, 1907.

Bill dusky brown, whitish at base of lower mandible; feet pale yellowish brown; iris dark brown.

No. 412. ♂ juv. Lufupa R., Oct. 26, 1907.

Bill dusky, gape cream-coloured; feet pale flesh-coloured; iris olive-grey.

The last specimen is only placed provisionally under this name. In size and general configuration it appears to be the young of this species, but the primaries are heavily marked with rufous.

Fam. FRINGILLIDÆ.

306. PETRONIA PETRONELLA.

Petronia petronella Licht.; Neave, loc. cit. p. 84.

No. 112. ♀. Dikulwe R., 5000 ft., March 24, 1907.

Bill brownish horn-coloured, paler below; feet grey; iris brown.

No. 241. Upper Lufira R., 3600 ft., June 18, 1907.

Bill brownish horn-coloured, paler below; feet greyish brown; iris brown.

No. 270. ♂. Near Kambove, 4000 ft., July 4, 1907.

Bill brownish horn-coloured, paler below; feet dull grey; iris brown.

No. 388. ♀. Lulua Post, W. Lualaba district, 4000 ft., Oct. 7, 1907.

Bill brownish horn-coloured, paler below; feet greenish grey; iris brown.

No. 468. Juv. Luangwa Valley, 2000 ft., Feb. 26, 1908.

Bill brownish horn-coloured, paler below; feet dark grey; iris brown.

No. 746. ♂. Machinga Plateau, Kalungwisi District, Sept. 22, 1908.

Bill brownish horn-coloured, paler below; feet dark greyish brown; iris brown.

No. 792. ♂. Lower Chambezi Valley, Oct. 25, 1908.

Bill brownish horn-coloured, paler below; feet dusky grey; iris brown.

Almost ubiquitous in woodland, especially common in hilly districts.

307. PASSER DIFFUSUS.

Passer diffusus (Smith); Reich. loc. cit. p. 230.

No. 130. ♂. Dikuiwe R., 4000 ft., April 1, 1907.

Bill black; feet pale brownish; iris chestnut-brown.

No. 235. ♂. Upper Lufira R., 3500 ft., June 15, 1907.

Bill black; feet pale brownish; iris yellow-brown.

No. 478. ♀. Upper Luangwa R., 2000 ft., March 11, 1908.

Bill black; feet pale yellowish brown; iris dark brown.

No. 482. ♂. Upper Luangwa R., March 14, 1908.

Bill black; feet olive-yellow; iris dark brown.

308. POLIOSPIZA MELANOCHROA.

Poliospiza melanochroa Reich.; Neave, loc. cit. p. 86.

No. 242. ♂. Upper Lufira R., 3600 ft., June 19, 1907.

Bill brownish horn-coloured, paler below; feet dusky brown; iris reddish brown.

This seems a scarce bird, perhaps partly from being so inconspicuous. It seems commonest in woodland country.

309. POLIOSPIZA GULARIS.

Poliospiza gularis (A. Smith); Reich. loc. cit. iii. p. 258.

No. 67. ♂. Kambove, 4500 ft., Feb. 28, 1907.

Bill horn-brown; feet horn-brown; iris brown.

310. POLIOSPIZA ANGOLENSIS.

Poliospiza angolensis (Gm.) ; Reich. loc. cit. iii. p. 253.

No. 208. ♂. Upper Lualaba R., 3500 ft., May 23, 1907.

Bill dusky brown, lower mandible much paler ; feet reddish brown ; iris brown.

311. SERINUS SHARPII.

Serinus sharpei O. Neum. ; Reich. loc. cit. iii. p. 266.

No. 40. ♂ ad. Kambove, Feb. 17, 1907.

Bill brownish horn-coloured, paler below ; feet dusky ; iris brown.

No. 376. ♀ ad. Lufupa R., Oct. 1, 1907.

Bill yellowish horn-coloured ; feet brown ; iris brown.

Nos. 568, 569. ♂ ♂. Luena, June 17, 18, 1908.

Bill brownish horn-coloured, yellowish below ; feet dark brown ; iris brown.

No. 811. ♀. Mansya R., near L. Young, Nov. 1, 1908.

Bill brownish yellow, lower mandible pale yellow ; feet brown ; iris brown.

I found this bird widely but locally distributed.

312. SERINUS ICTERUS.

Serinus icterus (Vieill.) ; Neave, loc. cit. p. 85.

No. 83. ♂. Dikulwe R., 4000 ft., March 15, 1907.

Bill horn-brown ; feet greyish brown ; iris brown.

No. 349. ♀. Bunkeya R., 3000 ft., Aug. 31, 1907.

Bill brownish horn-coloured, slightly paler below ; feet brown ; iris brown.

No. 546, 547. ♂ ♀. Upper Luansenshi R., June 3, 1908.

Bill brownish horn-coloured, paler below ; feet greyish brown ; iris brown.

No. 579. ♀ juv. N. shore of L. Bangweolo, June 22, 1908.

Bill brownish horn-coloured ; feet dusky ; iris reddish brown.

No. 649. ♂. Lofu R., Tanganyika Plateau, Aug. 8, 1908.

Bill brownish horn-coloured; feet greyish brown; iris brown.

No. 771. ♀. East of L. Bangweolo, Oct. 15, 1908.

Bill brownish horn-coloured; feet and iris dark brown.

Occurs everywhere and is much the commonest species of the genus in this region.

313. SERINUS CAPISTRATUS.

Serinus capistratus Finsch; Reich. loc. cit. iii. p. 273.

No. 64. ♂. Kambove, 4500 ft., Feb. 28, 1907.

Bill horn-coloured, paler below; feet pinkish brown; iris brown.

No. 245. ♂ juv. Upper Lufira R., 3500 ft., June 21, 1907.

Bill brownish horn-coloured, paler below; feet reddish brown; iris dark brown.

No. 351. ♂. Bunkeya R., 3000 ft., Sept. 1, 1907.

Bill pinkish white; feet pale brown; iris brown.

Not uncommon in Katanga. I did not observe it in N.E. Rhodesia.

314. EMBERIZA MAJOR.

Emberiza major (Boc.); Reich. loc. cit. iii. p. 284.

No. 63. ♂? Kambove, 4500 ft., Feb. 27, 1907.

Bill horn-brown, paler below; feet pinkish; iris brown.

No. 74. ♀. Kambove, March 4, 1907.

Bill horn-brown, lower mandible flesh-coloured, tipped with horn-colour; feet greyish flesh-coloured; iris brown.

No. 135. ♂ imm. Dikulwe R., April 2, 1907.

Bill horn-brown, paler below; feet pinkish grey; iris dark brown.

No. 210. ♀. Upper Lualaba R., May 23, 1907.

Bill dusky brown, lower mandible pinkish, tipped with dusky; feet pale brownish; iris brown.

Not uncommon in Katanga; never met with in Northern Rhodesia.

315. EMBERIZA FLAVIVENTRIS.

Emberiza flaviventris (Vieill.); Neave, loc. cit. p. 86.

No. 184. ♂. Lualaba R., 3500 ft., May 14, 1907.

Bill dusky brown, lower mandible pink, tipped with dusky; feet pinkish brown; iris brown.

No. 455. ♂ juv. Serenje, 4500 ft., Dec. 1907.

Bill blackish, brown below; feet very pale grey; iris brown.

No. 563. ? Luwingu, June 10, 1908.

Bill dusky, pinkish below; feet greyish flesh-coloured; iris brown.

No. 695. ♀. Kalungwisi Valley, Sept. 4, 1908.

Bill brownish horn-coloured, base of lower mandible pinkish; feet brownish horn-coloured; iris brown.

This little species is ubiquitous. It usually inhabits the woodland and feeds on the ground.

316. FRINGILLARIA TAHAPISI.

Fringillaria tahapisi (Smith); Reich. loc. cit. iii. p. 289.

No. 176. ♂. Lualaba R., 3500 ft., May 10, 1907.

Bill above dusky brown, below bright yellow; feet yellow-brown, tarsi paler; iris dark brown.

No. 374. Upper Lualaba R., 4000 ft., Sept. 26, 1907.

Bill brownish horn-coloured, base of lower mandible yellowish; feet brown, tarsi paler; iris dark brown.

No. 515. Chambezi Valley, 4000 ft., May 1, 1908.

Bill brown above, yellowish below; feet brownish, tarsi paler; iris dark brown.

No. 622. ♂ juv. Luwingu, July 22, 1908.

Bill dusky, paler below; feet pale greyish brown; iris dark brown.

The Rock-Bunting is not uncommon, especially on wooded hill-sides. It usually selects the top of a tree from which to give forth its broken song. I have also found it rather shy.

Fam. PLOCEIDÆ.

317. VIDUA SERENA.

Vidua serena (L.); Neave, loc. cit. p. 87.

No. 191. ♂ juv. Upper Lualaba R., May 17, 1907.

Bill coral-red; feet dark brown; iris dark brown.

No. 464. ♂ ad. Lusangazi R., Luangwa Valley, Jan. 16, 1908.

Bill coral-pink ; feet dark brown ; iris dark brown.

No. 511. ♂ juv. Chambezi Valley, April 23, 1908.

Bill black, gape white ; feet dusky ; iris dark brown.

318. STEGANURA PARADISEA.

Steganura paradisea (L.) ; Neave, loc. cit. p. 87.

No. 152, 183. ♂ in summer. Lualaba R., 2500–3500 ft., April and May 1907.

Bill black ; feet dark brown ; iris dark brown.

No. 189. ♂ in winter. Upper Lualaba R., 3500 ft., May 16, 1907.

Bill brownish horn-coloured ; feet greyish brown ; iris dark brown.

No. 232. ♂ in winter. Upper Lufira R., 3500 ft., June 13, 1907.

Bill dusky ; feet dark brown ; iris dark brown.

A very dark specimen.

No. 607. ♂ juv. Luena, July 14, 1908.

Bill dark brown ; feet greyish brown ; iris brown.

319. PENTHETRIA ARDENS.

Penthetria ardens (Bodd.) ; Neave, loc. cit. p. 87.

No. 71. ♂ in summer. Kambove, 4500 ft., March 1, 1907.

Bill black ; feet black ; iris dusky.

No. 124. ♀ in summer. Dikulwe R., 4000 ft., March 30, 1907.

Bill brownish horn-coloured, paler below ; feet pinkish brown ; iris brown.

No. 136. ♂ in summer. Dikulwe R., April 2, 1907.

Bill black ; feet dusky ; iris brown.

No. 254. ♀ in winter. Upper Lufira R., 3500 ft., June 25, 1907.

Bill brownish horn-coloured, paler below ; feet pinkish brown ; iris brown.

This bird is widely distributed, though not usually very common. I have more than once seen the males assist a host of insectivorous birds in reducing the numbers of swarming termites.

320. PENTHETRIA HARTLAUBI.

Penthetria hartlaubi Bocage ; Neave, loc. cit. p. 88.

No. 371. ♂ in winter. Upper Lualaba R., 4000 ft., Sept. 24, 1907.

Bill, upper mandible brownish horn-coloured ; feet dark brown ; iris dark brown.

No. 449. ♂ in summer. Near Serenje, N.E. R., 4500 ft., Dec. 18, 1907.

Bill black, edges of both mandibles bluish white ; feet black ; iris dark brown.

No. 453. ♀ in summer. Near Serenje, N.E. R., Dec. 20, 1907.

Bill pale brownish horn-coloured, slightly paler below ; feet pale brownish ; iris brown.

No. 512. ♂ in summer. Chambezi Valley, 3500 ft., April 25, 1908.

Bill black, lower mandible bluish white ; feet very dark brown ; iris dusky.

No. 571. ♂, winter. Luena, N.E. L. Bangweolo, June 17, 1908.

Bill brownish horn-coloured above, blue-grey below ; feet dusky ; iris brown.

No. 575, 576. ♀ ♀, winter. Luena, June 18, 1908.

Bill pinkish brown, paler below ; feet pale greyish horn-coloured ; iris dark brown.

Nos. 612, 613. ♂ ♂ in winter. Luwingu, July 17, 1908.

Bill brownish horn-coloured ; feet and iris brown.

No. 706. ♂, intermediate. Kalungwisi R., Sept. 9, 1908.

Bill brownish horn-coloured, paler below ; feet and iris brown.

Nos. 754, 755. ♂ ♂, intermediate. Near Luena, Oct. 3, 1908.

Bill dusky above, bluish white below ; feet and iris dark brown.

This handsome Widow-bird is not uncommon on grassy plains and swamps on the High Plateau. The males are very tame, but the females, especially at the breeding-season, are very shy and difficult to obtain.

321. PENTHETRIA ALBONOTATA.

Penthetria albonotata (Cass.); Reich. loc. cit. iii. p. 146.

No. 458. ♂ in summer. Petauke, 2400 ft., Jan. 8, 1908.

Bill pale bluish white; feet dusky brown; iris dark brown.

No. 466. ♂ in summer. Rukususi R., Upper Luangwa Valley, 3000 ft., Feb. 17, 1908.

Bill blue-grey; feet black; iris dark brown.

No. 628. ♂ in winter. Upper Kalungwisi R., July 27, 1908.

Bill brownish horn-coloured, paler below; feet pale brown; iris brown.

This bird is more widely distributed than either *P. hartlaubi* or *Urobrachya bocagii*, and differs from those species in occurring in the Luangwa Valley.

322. PENTHETRIOPSIS MACRURA.

Penthetriopsis macroura (Gm.).

Coliuspasser macroura Reich. loc. cit. iii. p. 138.

No. 85. ♂ in summer. Dikulwe R., 3500 ft., March 15, 1907.

Bill black, lower mandible tipped with greyish horn-colour; feet black; iris dark brown.

No. 86. ♀ in summer. Dikulwe R., March 15, 1907.

Bill brownish horn-coloured, paler below; feet pinkish brown; iris dark brown.

No. 87. ♂ in summer. Dikulwe R., March 15, 1907.

Bill black, lower mandible tipped with bluish horn-colour; feet black; iris dark brown.

No. 215. ♂ in summer. Upper Lualaba R., May 28, 1907.

Bill black, lower mandible tipped with greyish horn-colour; feet black; iris dark brown.

This bird was only met with in the Kambove district and to the west of it. I never saw it in Northern Rhodesia.

323. UROBRACHYA BOCAGII.

Urobrachya bocagei Sharpe; Reich. loc. cit. iii. p. 133.

No. 500. ♀ in summer. Nashinga swamp, Chambezi Valley, 4000 ft., April 16, 1908.

Bill brownish horn-coloured, paler below; feet pinkish horn-coloured; iris brown.

No. 505. ♂ in summer. Nashinga swamp, Chambezi Valley, April 17, 1908.

Bill bluish white; feet dusky brown; iris dark brown.

No. 506. ♂ in summer. Nashinga swamp, Chambezi Valley, April 18, 1908.

Bill pale bluish white; feet black; iris dark brown.

No. 711. ♂ in winter. Kalungwisi R., Sept. 9, 1909.

Bill bluish grey, brownish around nostrils; feet and iris brown.

Nos. 794, 796. ♀ ♀ in winter. Lower Chambezi Valley, Oct. 26, 1908.

Bill brownish horn-coloured, paler below; feet and iris brown.

I found this rare Widow-bird not uncommon in swamps in the High Plateau country, in the more northern portion of N.E. Rhodesia. It frequently lives among reeds and swamp-grasses at a very considerable distance from dry land.

324. PYROMELANA FLAMMICEPS.

Pyromelana flammiceps (Swains.); Neave, loc. cit. p. 88.

No. 88. ♂ in summer. Dikulwe R., 4000 ft., March 15, 1907.

Bill black; feet brown; iris dark brown.

No. 89. ♀ in summer. Dikulwe R., 4000 ft., March 15, 1907.

Bill brownish horn-coloured, paler below; feet pinkish brown; iris brown.

325. PYROMELANA NIGRIFRONS.

Pyromelana nigrifrons Böhm; Neave, loc. cit. p. 89.

No. 465. ♂ in summer. Near Ft. Jameson, Jan. 18, 1908.

Bill black; feet brownish pink; iris dark brown.

326. PYROMELANA XANTHOMELÆNA.

Pyromelana xanthomelæna Sharpe; Neave, loc. cit. p. 89.

No. 489. ♂ in summer. Upper Luangwa Valley, 3000 ft., March 29, 1908.

Bill, upper mandible black, lower white; feet dull brownish; iris dark brown.

327. PYROMELANA TAHA.

Pyromelana taha (Smith); Reich. loc. cit. iii. p. 114.

No. 312. ♀ ad. Bunkeya R., 3000 ft., Aug. 8, 1907.

Bill brownish horn-coloured, paler below; feet pale brown; iris brown.

328. PLOCEIPASSER PECTORALIS.

Ploceipasser pectoralis (Peters); Neave, loc. cit. p. 90.

No. 473. ♀ in summer. } Lundazi R., Upper Luangwa Val-
No. 474. ♂ in summer. } ley, 2000 ft., March 4, 1908.

Bill black; feet greyish brown; iris reddish brown.

This bird, so far as my experience goes, is rigidly confined to "Mopane" forest in the Luangwa Valley. It is a gregarious and extremely noisy bird, building a very untidy grass-nest, which is usually placed at the tip of a branch of Mimosa.

329. QUELEA LATHAMI.

Quelea lathami (Smith); Neave, loc. cit. p. 90.

330. QUELEA CARDINALIS.

Quelia cardinalis (Hartl.); Neave, loc. cit. p. 91.

No. 487. ♂ in summer. Upper Luangwa Valley, 3000 ft., March 29, 1908.

Bill black; feet brownish flesh-coloured; iris dark brown.

331. SPERMESTES SCUTATUS.

Spermestes scutatus Heugl.; Neave, loc. cit. p. 91.

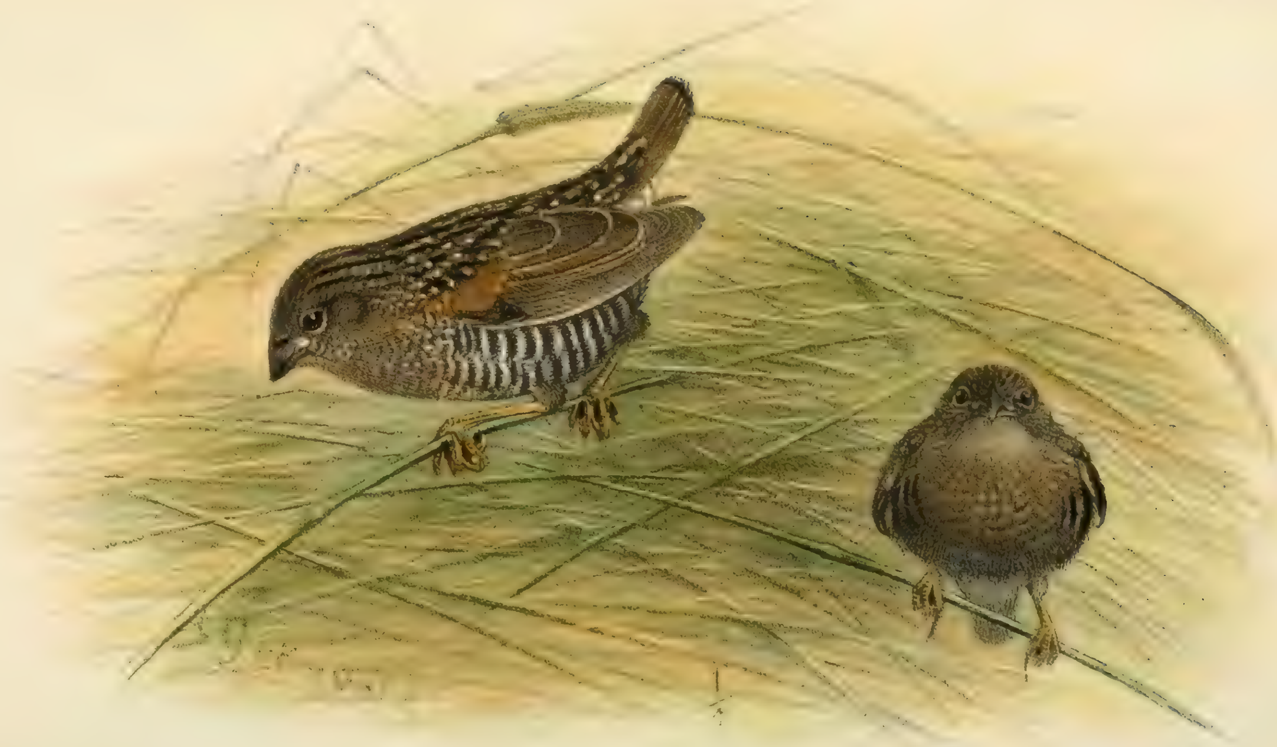
No. 131. Dikulwe R., 4000 ft., April 1, 1907.

Bill black, lower mandible bluish white; feet dusky; iris brown.

No. 255. ♂. Upper Lufira R., 3500 ft., June 25, 1907.

Bill black, lower mandible whitish tipped with grey; feet dusky; iris dark brown.

Nos. 256, 257. Imm. ♂ ♀. Upper Lufira R., June 25, 1907.



West, Newman imp.

PALUDIPASSER LOCUSTELLA

Bill dusky brown, slightly paler below; feet dusky brown; iris dark brown.

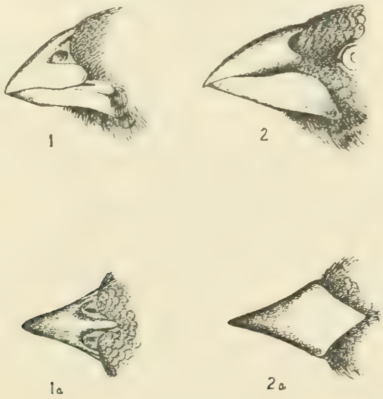
Nos. 751, 752. ♂ ♀. Luwingu, edge of Chimpili Plateau, Sept. 26, 1908.

Bill dusky, bluish white below; feet dusky; iris dark brown.

PALUDIPASSER Neave.

This new genus most nearly resembles *Spermestes*, but differs chiefly in the character of the bill, which is much shorter and more slender. The basal part of the culmen is laterally compressed, forming a distinct keel, and, when viewed from above, the nasal openings are exposed and conspicuous and much more approximate than in *Spermestes*. The lower mandible has a distinct angle near the distal extremity, much as in *Emberiza*.

Text-fig. 3.



1, 1 *a*. Bill of *Paludipasser locustella*.
2, 2 *a*. „ *Spermestes scutatus*.

Scale of figures $\frac{2}{1}$.

332. PALUDIPASSER LOCUSTELLA. (Plate III.)

Paludipasser locustella Neave, Bull. B. O. C. xxv. p. 25.

Nos. 542, 543. ♂ juv. Upper Luansenshi R., N.E. of L. Bangweolo, 4000 ft., June 1, 1908.

Bill dusky, gape pink; feet pale brownish; iris brown.

This extraordinary little bird inhabits a peculiar type of marsh common in the neighbourhood of Lake Bangweolo and well described by Livingstone as "sponges." These areas are covered with fine wiry matted grasses to the depth of some two feet. It is in this matted grass that *P. locustella* lives in small flocks. Its flight is weak, seldom extending more than a few yards, and reminded me of that of a locust.

333. AMAURESTHES FRINGILLOIDES.

Amauresthes fringilloides (Lafr.); Neave, loc. cit. p. 92.

No. 178. ♂. Lualaba R., 3000 ft., May 10, 1907.

Bill black, lower mandible blue-grey tipped dusky; feet dusky grey; iris dark brown.

334. LAGONOSTICTA NIVEIGUTTATA.

Lagonosticta niveiguttata (Peters); Neave, loc. cit. p. 92.

No. 345. ♂. Bunkeya R., 3000 ft., Aug. 31, 1907.

Bill black, base of lower mandible blue-grey; feet grey-brown; iris brown; orbit blue.

This is not a High Plateau species, but frequents the low-lying river-valleys in both the Congo and Zambezi basins. It is usually to be found among the thickets on the edge of forest, and is rather shy.

335. LAGONOSTICTA BRUNNEICEPS.

Lagonosticta brunneiceps Sharpe; Neave, loc. cit. p. 93.

No. 459. ♂ ad. Petauke, Luangwa Valley, 2400 ft., Jan. 8, 1908.

Bill pink, culmen dusky; feet pale brownish flesh-coloured; iris brown; orbit pale yellow.

I only met with this species in the Luangwa Valley. It seems to be replaced in the High Plateau by the larger *L. hæmatocephala*.

336. LAGONOSTICTA HARTERTI.

Lagonosticta harterti Shelley; Sharpe, Hand-l. Birds, v. p. 430.

Lagonosticta nitidula Hartl.; Reich. loc. cit. iii. p. 195.

No. 198. ♂. Upper Lualaba R., 3500 ft., May 20, 1907.

Bill mauve-pink, culmen and gonys dusky; feet dusky brown; iris dark brown.

No. 292. Bunkeya R., 3000 ft., July 27, 1907.

Bill pinkish, culmen and gonys dusky; feet dusky brown; iris dusky brown.

No. 293. ♂. Bunkeya R., 3000 ft., July 27, 1907.

Bill pinkish, culmen and gonys dusky; feet dusky brown; iris dark brown.

No. 583. ♂. Chishi Island, L. Bangweolo, June 24, 1908.

Bill dusky purple, reddish purple below; feet dark brown; iris brown.

This is rather a shy bird, haunting thickets &c. much in the way of *L. niveiguttata*.

337. LAGONOSTICTA HÆMATOCEPHALA.

Lagonosticta hæmatocephala Neum.; Sharpe, Hand-l. Birds, v. p. 431.

No. 128. ♂. Dikulwe R., 4000 ft., April 1, 1907.

Bill bluish horn-coloured, tipped with dusky; feet greyish purple; iris brown, orbit pink.

No. 148. ♂. Kaluli R., 3000 ft., April 20, 1907.

Bill bluish dusky, lower mandible blue-grey tipped with dusky; feet dusky grey; iris dark brown; orbit red.

No. 274. ♀. Kambove, 4500 ft., July 9, 1907.

Bill dusky grey, slightly paler below; feet grey-brown; iris dark brown.

No. 588. ♀. Chishi Island, L. Bangweolo, June 26, 1908.

Bill dusky purplish; feet dark grey; iris dark brown.

No. 730. ♂. Kalungwisi R., Sept. 16, 1908.

Bill dusky bluish; feet dark grey; iris brown.

No. 749. ♂? Edge of Chimpili Plateau, Luwingu, Sept. 24, 1908.

Bill dusky bluish; feet brown; iris dark brown, orbit pale bluish.

A common and tame species, often seen feeding on bare spots in native villages &c. with *Estrilda angolensis*.

338. LAGONOSTICTA RHODOPARIA.

Lagonosticta rhodoparia Heugl.; Neave, loc. cit. p. 93.

339. HYPOCHÆRA CODRINGTONI.

Hypochæra codringtoni Neave, loc. cit. p. 94.

340. PYTELIA AFRA.

Pytelia afra (Gm.); Reich. loc. cit. iii. p. 162.

No. 258. ♀. Upper Lufira R., 3600 ft., June 26, 1907.

Bill dark brown, paler below; feet greyish brown; iris reddish brown.

No. 268. ♂. Near Kambove, 4000 ft., July 4, 1907.

Bill red, base of upper mandible dusky; feet light brown; iris red.

No. 560. ♀. Luwingu, edge of Chimpili Plateau, June 9, 1908.

Bill brownish horn-coloured; feet pale pinkish brown; iris reddish brown.

No. 608. ♀ juv. Near Luena, July 15, 1908.

Bill dark brown; feet brownish flesh-coloured; iris reddish brown.

This bird is usually found in pairs, feeding on the ground in woodland country.

341. HYPOCHÆRA FUNEREA.

Hypochæra funerea (de Tarrag.); Reich. loc. cit. iii. p. 215.

No. 127. ♂ ad. Dikulwe R., 4000 ft., April 1, 1907.

Bill white; feet pale flesh-coloured; iris dark brown.

No. 129. ♂ juv. Dikulwe R., 4000 ft., April 1, 1907.

Bill whitish; feet flesh-coloured; iris brown.

342. SPORÆGINTHUS SUBFLAVUS.

Sporæginthus subflavus (Vieill.); Neave, loc. cit. p. 94.

I found this bird sparingly over a wide area. A specimen shot on the Upper Lualaba R., May 16, 1907, was too much damaged to be worth skinning.

343. ESTRILDA ASTRILDA.

Estrilda astrilda (L.); Neave, loc. cit. p. 94.

344. Estrilda angolensis.

Estrilda angolensis (L.); Neave, loc. cit. p. 95.

No. 308. ♀? Bunkeya R., 3000 ft., Aug. 4, 1907.

Bill amethyst-pink, tipped and edged with dusky; feet pale brown; iris red-brown.

No. 355. ♂. Bunkeya R., 3000 ft., Sept. 2, 1907.

Bill lilac-pink, tipped with dusky; feet greyish flesh-coloured; iris brown.

This little bird is ubiquitous over a wide area and is extremely tame. It is almost domesticated in the villages, obtaining most of its food from the refuse of the native grain.

345. Estrilda phœnicotis.

Uræginthus phœnicotis (Swains.); Sharpe, Hand-l. Birds, v. p. 456.

Uræginthus bengalus (L.); Reich. loc. cit. iii. p. 207.

Nos. 663, 664. ♂ ♀. Lofu Valley, L. Tanganyika, Aug. 14, 1908.

Bill pinkish lilac, tip and culmen dusky; feet pale brownish; iris reddish brown.

This bird appears to replace *E. angolensis* in the Lower Lofu Valley, S. of L. Tanganyika. I did not meet with it elsewhere.

346. Estrilda minor.

Estrilda minor (Cab.); Reich. loc. cit. iii. p. 180.

No. 311. ? Bunkeya R., 3000 ft., Aug. 7, 1907.

Bill red; feet dark brown; iris brown.

347. Estrilda benguellensis.

Estrilda benguellensis Neum. Bull. B. O. C. xxi. p. 96 (1908).

No. 193. ♂ ad. Upper Lualaba R., 3500 ft., May 18, 1907.

Bill crimson; feet dark brown; iris red.

No. 243. ♀ ad. Upper Lufira R., 3500 ft., June 19, 1907.

Bill coral-red; feet dusky brown; iris red.

No. 629. ♀. Upper Kalungwisi R., July 29, 1908.

Bill coral-red; feet dusky; iris orange-red.

I found this recently described species in several places, It was always in large flocks, and frequented the reeds and long grasses on river-banks in open parts of the country.

348. ESTRILDA PERREINI.

Estrilda perreini (Vieill.); Reich. loc. cit. iii. p. 193.

No. 185. ♂. Lualaba R., 3500 ft., May 14, 1907.

Bill bluish grey, tipped with dusky; feet black; iris red-brown.

No. 375. ♀. Lufupa R., 4000 ft., Oct. 1, 1907.

Bill blue-grey, upper mandible tipped and edged with black; feet black; iris dark brown.

No. 397. ♀. Lufupa R., 4000 ft., Oct. 12, 1907.

Bill blue-grey, upper mandible tipped and edged with dusky; feet black; iris dark brown.

Only met with at Kambove and to the west of it.

349. ANAPLECTES RUBRICEPS.

Anaplectes rubriceps (Sund.); Neave, loc. cit. p. 96.

Confined to the Luangwa Valley, where it is common.

350. ANAPLECTES MELANOTIS.

Anaplectes melanotis (Lafr.); Reich. loc. cit. iii. p. 26.

No. 387. ♂. Upper Lufupa R., 4500 ft., Oct. 7, 1907.

Bill orange; feet pinkish brown; iris reddish brown.

No. 544. ♂ juv. Upper Luansenshi R., N. of L. Bangweolo, June 2, 1908.

Bill salmon-orange; feet pinkish brown; iris reddish brown.

This bird seems to replace *A. rubriceps* west of the Mchinga Escarpment. It is, however, much scarcer, and always seems to form one of a "bird-party": it is the only member of the Ploceidæ that I have observed to do so.

351. SYCOBROTUS BICOLOR.

Sycobrotus bicolor (Vieill.); Reich. loc. cit. iii. p. 34.

No. 166. ♂ ad. Lualaba R., 2500 ft., May 3, 1907.

Bill blue-grey, distal half of upper mandible dusky; feet pinkish; iris red.

No. 343. ♂. Bunkeya R., 3000 ft., Aug. 31, 1907.

Bill bluish grey, tip of upper mandible dusky; feet pinkish grey; iris red.

No. 346. ♂. Bunkeya R., 3000 ft., Aug. 31, 1907.

Bill whitish, tip of upper mandible and nostrils dusky; feet pinkish grey; iris reddish brown.

No. 680. ♂. Lofu Valley, Aug. 24, 1908.

Bill blue-grey, tip of culmen dusky; feet pinkish grey; iris dull red.

This is essentially a dense forest species. It is rather shy and has an extremely harsh jarring note. I only met with it within the Congo Basin.

352. SITAGRA CROCATA.

Sitagra crocata (Hartl.); Neave, loc. cit. p. 96.

No. 30. ♂ juv. Kambove, 4500 ft., Feb. 14, 1907.

Bill brownish horn-coloured, whitish below; feet dull greyish; iris dark brown.

No. 197. ♂ ad. Upper Lualaba R., 3500 ft., May 20, 1907.

Bill black; feet dull greyish; iris pale sulphur-yellow.

No. 262. ♀ ad. Kambove, 4500 ft., July 1, 1907.

Bill black, tip of lower mandible whitish; feet grey; iris grey.

No. 332. ♂ ad. Bunkeya R., 3000 ft., Aug. 21, 1907.

Bill black; feet grey; iris pale olive-brown.

No. 357. ♂ ad. Bunkeya R., 3000 ft., Sept. 5, 1907.

Bill black; feet grey; iris pale yellow.

This bird is common, but is not very often seen, as it usually skulks among the thickets on river-banks.

353. AMBLYOSPIZA ALBIFRONS.

Amblyospiza albifrons (Vigors); Reich. loc. cit. iii. p. 98.

I did not obtain this species myself, but saw some living specimens which had been obtained in the neighbourhood of Ft. Jameson.

354. HYPHANTORNIS NIGRICEPS.

Hyphantornis nigriceps Layard; Neave, loc. cit. p. 98.

No. 140. ♂. Dikulwe R., 4000 ft., April 4, 1907.

Bill black; feet brownish; iris orange-scarlet.

No. 192. ♀. Upper Lualaba R., 3500 ft., May 17, 1907.

Bill brownish horn-coloured, paler below; feet brownish flesh-coloured; iris dark brown.

No. 321. ♂ ad. Bunkeya R., 3000 ft., Aug. 13, 1907.

Bill black; feet horn-brown; iris red.

No. 589. ♀. Chishi Island, L. Bangweolo, June 28, 1908.

Bill brownish horn-coloured, paler below; feet brownish pink; iris scarlet.

No. 718. ♀. Kalungwisi R., Sept. 11, 1908.

Bill brownish horn-coloured; feet pale brownish; iris reddish orange.

A common and universally distributed species, which nests in large colonies in reeds on river-banks or on trees which overhang the water.

355. HYPHANTORNIS CABANISI.

Hyphantornis cabanisi Peters; Reich. loc. cit. iii. p. 73.

No. 151. ♂. Mazanguli, mid-Lualaba Valley, April 24, 1907.

Bill black; feet silver-grey; iris pale sulphur-yellow.

356. HYPHANTORNIS SHELLEYI.

Hyphantornis shelleyi Sharpe; Neave, loc. cit. p. 98.

No. 457. ♂ ad. (summer). Petauke, Jan. 5, 1908.

Bill black; feet reddish flesh-coloured; iris orange-red.

Not met with out of the Luangwa Valley, where it is local. It is usually found in colonies, and nests in Mimosa-trees. It is one of those Weavers which associate their nests with those of the ferocious wasps of the genus *Polistes*.

357. HYPHANTORNIS VITELLINA.

Hyphantornis vitellina (Licht.); Reich. loc. cit. iii. p. 81.

Nos. 595, 596. ♂ ♀. L. Bangweolo, July 5, 1908.

Bill brownish horn-coloured, paler below; feet brown; iris—♂ scarlet, ♀ brown.

No. 783. ♀. E. of L. Bangweolo, Oct. 20, 1908.

Bill brownish horn-coloured, paler below; feet brown; iris dark brown.

I attribute these examples with some doubt to this species, as they are more brightly coloured, especially as regards their bright yellowish-green rumps. They may possibly represent a new race of *vitellina*, but as all the specimens are in winter plumage it is impossible to decide this point at present. These birds were found haunting the large reed-covered lagoons on Lake Bangweolo, often at considerable distances from dry land. Their yellowish-green rumps were very conspicuous on the wing.

358. HYPHANTORNIS XANTHOPS.

Hyphantornis xanthops Hartl.; Neave, loc. cit. p. 97.

No. 17. ♂. Kambove, 4500 ft., March 2, 1907.

Bill black; feet dull pinkish; iris butter-coloured.

No. 354. ♀. Bunkeya R., 3000 ft., Sept. 1, 1907.

Bill brownish horn-coloured, paler below; feet brown; iris olive-yellow.

No. 358. ♂. Bunkeya R., 3000 ft., Sept. 7, 1907.

Bill black; feet brownish flesh-coloured; iris pale sulphur-yellow.

Nos. 573, 574. ♂♂. Luena, N. L. Bangweolo, June 18, 1908.

Bill brownish horn-coloured, paler below; feet brown; iris hazel.

No. 582. ♂. Chishi Island, L. Bangweolo, June 23, 1908.

Bill and feet brownish horn-coloured; iris golden yellow.

359. HYPHANTORNIS GALBULA.

Hyphantornis galbula (Rüpp.)?; Neave, loc. cit. p. 97.

Fam. ORIOLIDÆ.

360. ORIOLUS NOTATUS.

Oriolus notatus Peters; Neave, loc. cit. p. 99.

No. 154. ♂ juv. Kaluli R., Lualaba Valley, 3000 ft., April 27, 1907.

Bill dark reddish; feet grey; iris red-brown.

Andersson's Oriole is not uncommon in river-valleys, but rare in the High Plateau country.

361. Oriolus larvatus.

Oriolus larvatus Licht.; Neave, loc. cit. p. 99.

No. 90. Dikulwe R., 4000 ft., March 16, 1907.

Bill dull pinkish; feet dusky; iris blood-red.

No. 636. ♂. Mporokoso, July 31, 1908.

Bill reddish brown; feet dark grey; iris red.

The Black-headed Oriole is ubiquitous.

Fam. Dicruridæ.

362. Dicrurus ludwigii.

Dicrurus ludwigii Smith; Neave, loc. cit. p. 100.

No. 31. Kambove, 4500 ft., Feb. 14, 1907.

Bill black; feet black; iris yellow-brown.

No. 672. ♂. Lofu R., L. Tanganyika, Aug. 16, 1908.

Bill and feet black; iris orange-red.

No. 713. Kalungwisi Valley, Sept. 10, 1908.

Bill and feet black; iris orange-red.

This bird, which is easily distinguished by its orange-red iris, has much the same habits as its larger relative, but seldom if ever ventures out of the dense bush on the banks of streams &c. It is specially common in "Msitu."

363. Dicrurus afer.

Dicrurus afer (Licht.); Neave, loc. cit. p. 100.

The common Drongo is ubiquitous.

Fam. Eulabetidæ.

364. Lamprotornis mevesi.

Lamprotornis mevesi (Wahlb.); Neave, loc. cit. p. 101.

No. 475. ♂. Lundazi R., Upper Luangwa Valley, 2000 ft. March 4, 1908.

Bill and feet black; iris dark brown.

This seems to be one of the birds peculiar to Mopane Forest in the Luangwa Valley, where it is common. I never met with it elsewhere.

365. Cinnyricinclus verreauxi.

Cinnyricinclus verreauxi (Boc.); Neave, loc. cit. p. 101.

No. 383. ♂. Upper Lufupa R., 4000 ft., Oct. 3, 1907.

Bill and feet black; iris sulphur-yellow.

No. 436. ♀. S.E Katanga, 4000 ft., Nov. 26, 1907.

Bill black, gape yellow; feet dusky; iris sulphur-yellow.

The latter specimen, though an undoubted female, has a trace of the male's purple colour on the secondaries.

This is a migratory bird which seems to be present in the country only from September to March or April.

366. CREATOPHORA CARUNCULATA.

Creatophora carunculata (Gm.); Sharpe, Hand-l. Birds, v. p. 517.

Perissornis carunculatus Reich. loc. cit. ii. p. 670.

No. 201. ♀. Upper Lualaba, 3500 ft., May 21, 1907.

Bill flesh-coloured; feet dirty flesh-coloured; iris brown; bare skin on sides of face yellow.

No. 584. ♀. Chishi Island, L. Bangweolo, June 24, 1908.

Bill flesh-coloured, dusky over nostrils; feet brownish grey; iris dark brown; bare skin behind the eye pale yellow.

367. LAMPROCOLIUS SPLENDIDUS GLAUCOVIRENS.

Lamprocolius glaucovirens (Elliot); Neave, loc. cit. p. 102.

No. 684. ♀. Lofu Valley, Tanganyika Plateau, Aug. 26, 1908.

Bill and feet black; iris creamy white.

Nos. 688, 691, ♂ ♂. Lofu Valley, Tanganyika Plateau, Aug. 26, 27, 1908.

Bill and feet black; iris creamy white.

No. 717. ♂. Kalungwisi Valley, Sept. 10, 1908.

Bill and feet black; iris creamy white.

No. 807. Juv. Near L. Young, Nov. 1, 1908.

Bill dusky, the gape yellow; feet dusky; iris brownish.

This young bird has the whole of the under surface of a chestnut-brown colour.

This handsome Starling appears to be migratory and to visit this part of Africa from October onwards. It is not present in the country during the dry season. It is usually to be found on fruit-trees in "Msitu."

368. LAMPROCOLIUS SYCOBIUS.

Lamprocolius sycobius Hartl.; Neave, loc. cit. p. 102.

No. 144. Kaluli R., Lualaba Valley, 3000 ft., April 18, 1907.

Bill and feet black; iris red.

No. 145. ♂. Kaluli R., April 18, 1907.

Bill and feet black; iris sulphur-yellow.

Nos. 263, 264. ♀♀. Kambove, 4500 ft., July 2, 1907.

Bill and feet black; iris orange-yellow.

No. 269. Kambove, 4500 ft., July 4, 1907.

Bill and feet black; iris vermilion.

No. 488. ♀. Upper Luangwa Valley, 2000 ft., March 29, 1908.

Bill and feet black; iris orange.

No. 577. ♂. Luena, N.E. of L. Bangweolo, June 28, 1908.

Bill and feet black; iris orange.

Fam. CORVIDÆ.

369. CORVULTUR ALBICOLLIS.

Corvultur albicollis (Lath.); Neave, loc. cit. p. 103.

This Crow occurs over a wide area, but is nowhere very common. It frequents hilly country and is usually seen in pairs.

370. CORVUS SCAPULATUS.

Corvus scapulatus Daud.; Neave, loc. cit. p. 103.

This bird is very local, and seems, where it does occur, to be more than half domesticated, as I have never seen it away from the outskirts of native villages. It is enormously abundant in the villages on the shores and islands of Lake Bangweolo. It is extremely tame, and may be seen perched on the roofs of the huts or on the ground within a few feet of natives.

X.—*On the Birds of Paraguay.*—Part II.

By Charles Chubb, Zoological Department, Brit. Mus.*

36. Conurus leucophthalmus.

Psittacus leucophthalmus Müll. Syst. Nat. Suppl. p. 75 (1778).

Maracana verde Azara. Apunt. i. p. 415. no. cclxxv. (1802).

Conurus parvus (Bodd.); Hartl. Ind. Azara, p. 17 (1847); Berlepsch, J. f. O. 1887, p. 25 (Lambaré).

Conurus leucophthalmus Salvad. Cat. B. Brit. Mus. xx. p. 187 (1891); Ihering, Revista Mus. Paulista, vi. p. 335.

a. ♀ imm. Sapucay, April 28, 1903.

Bill of a dirty cream-colour; feet dirty greyish brown; iris red, tinged with yellow. Shot in monte.

This example answers well to Count Salvadori's description of the young bird, having the bend of the wing yellowish green, very little red on the under wing-coverts, and no yellow or red on the thighs, which are green.

b. ♀ ad. Sapucay, April 20, 1903.

Bill dirty yellowish white; tarsi and feet grey; iris reddish orange.

37. Pyrrhura chiripepe.

Chiripepé Azara, Apunt. ii. p. 429, no. cclxxxi (1805).

Psittacus chiripepé Vieill. N. Dict. d'Hist. Nat. xxv. p. 361 (1817: ex Azara).

Conurus chiripepé Hartl. Ind. Azara, p. 18 (1847).

Conurus vittatus (nec Shaw), Berlepsch, J. f. O. 1887, pp. 25, 121 (Lambaré).

Pyrrhura vittata (part.) Salvad. Cat. B. Brit. Mus. xx. p. 214; Kerr, Ibis, 1892, p. 140 (Lower Pilcomayo).

Pyrrhura chiripepé Salvad. Ibis, 1900, p. 668.

Pyrrhura vittata chiripepe Ihering, Revista Mus. Paulista, vi. p. 335.

a. ♂ ad. Sapucay, September 30, 1902.

b, c. ♂; *d.* ♀ ad. Sapucay, August 1904.

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* Continued from p. 78.

Bill horn-coloured, paler at base of lower mandible; tarsi and feet slate-coloured; iris reddish brown.

This bird seems to be somewhat scarce in Paraguay and was not, apparently, known to Azara.

[This species is met with occasionally in pairs or in small groups of from four to six individuals, but is nowhere common throughout Central Paraguay; it is essentially a forest-loving bird, and I have never seen it on open lands.—*W. F.*]

38. PIONOPSITTACUS PILEATUS.

Psittacus pileatus Scop. Ann. i. p. 32 (1769).

Maracana cabeza roxa Azara, Apunt. ii. p. 437. no. cclxxxiv. (1805).

Psittacus erythrocephalus Vieill. N. Dict. d'Hist. Nat. xxv. p. 372 (1817, ex Azara).

Pionopsittacus pileatus Salvad. Cat. B. Brit. Mus. xx. p. 340; Ihering, Revista Mus. Paulista, vi. p. 336.

Prionopsittaca pileata Berlepsch, J. f. O. 1887, p. 122 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, August 17, 1904.

Bill grey; tarsi and feet slate-coloured; iris reddish brown.

39. PSITTACULA VIVIDA.

Psittacus passerina Linn. Syst. Nat. i. p. 150 (1776).

Lorito enano Azara, Apunt. ii. p. 463. no. cclxxxviii. (1805).

Psittacula passerina (nec Linn.), Berlepsch, J. f. O. 1887, p. 26 (Lambaré); Salvad. Cat. B. Brit. Mus. xx. p. 245; Ihering, Revista Mus. Paulista, vi. p. 335.

Psittacula vivida Ridgway; Berlepsch, Nov. Zool. xv., p. 285, note (1908).

a. ♀ ad. Sapucay, April 11, 1903.

Bill pale ash-coloured; tarsi and feet somewhat darker; iris brown.

b. ♂; *c.* ♀ ad. Sapucay, April 17, 18, 1904.

Bill greyish white; tarsi and feet slate-coloured; iris brown.

These three examples are in fully adult plumage.

[This species is resident in Paraguay, and is generally to be met with in small flocks of from fifteen to twenty individuals. Their favourite haunts are clumps of low bushes in the open camps, their plumage mingling so well with the foliage that they are hard to detect until they fly screaming away. Although the bird is so common, I know nothing of its nesting-habits.—*W. F.*]

40. CERYLE AMERICANA.

Alcedo americana Gm. Syst. Av. i. p. 451 (1788: Cayenne).

Martin-pescador verde obscuro Azara, Apunt. iii. p. 389. no. ccccxxi. (1805).

Alcedo viridis Vieill. N. Dict. d'Hist. Nat. xix. p. 413 (1818, ex Azara).

Ceryle americana Berlepsch, J. f. O. 1887, p. 23 (Lambaré); Sharpe, Cat. B. Brit. Mus. xvii. p. 131 (1892); Ihering, Revista Mus. Paulista, vi. p. 335.

a. ♂ ad. Sapucay, April 19, 1903.

Bill and feet black; iris brown.

41. BARYPHTHENGUS RUFICAPILLUS.

Tucano Tutú Azara, Apunt. i. p. 243. no. lii. (1802).

Baryphonus cyanogaster Vieill. N. Dict. d'Hist. Nat. xxi. p. 317 (1818).

Prionites ruficapillus Hartl. Ind. Azara, p. 4 (1847).

Momotus cyanogaster Scl. P. Z. S. 1857, p. 255 (Paraguay).

Baryphthengus ruficapillus Berlepsch, J. f. O. 1887, pp. 22, 121 (Lambaré); Sharpe, Cat. B. Brit. Mus. xvii. p. 330 (1892); Ihering, Revista Mus. Paulista, vi. p. 334 (Paraguay).

a, b, c. ♂; *d.* ♀ ad. Sapucay, April, May, July, and October 1902–04.

Bill black; tarsi and feet purplish slate-coloured; iris ruby-brown.

These four specimens appear to be fully adult, being uniform in colour above, but the cinnamon-rufous band on the lower breast varies both in colour and extent.

[Resident, but not common. This is the Guiratoro (Bull-bird), not so named on account of its voice, but on account of its peculiar nesting-habits. Along the hills at

Sapucay the presence of the bird is at once made known by the enormous excavations, which often measure four feet across, as if a bull in its rage had ploughed up the ground. The entrance is funnel-shaped, and narrows to some six inches in width, and thence has a depth of about eighteen inches, the eggs being laid at the bottom.—*W. F.*]

42. PODAGER NACUNDA.

Ibiyau ñacundá Azara, Apunt. ii. p. 544. no. cccxii. (1805).

Caprimulgus nacunda Vieill. N. Dict. d'Hist. Nat. x. p. 240 (1817); Hartl. Ind. Azara, p. 20 (1847).

Podager nacunda Berlepsch, J. f. O. 1887, p. 19 (Lambaré); Hartert, Cat. B. Brit. Mus. xvi. p. 619 (1892); Oates, Cat. Eggs Brit. Mus. iii. p. 58 (1903); Ihering, Revista Mus. Paulista, vi. p. 332.

a. Ad. Sapucay.

Bill black; tarsi and feet dirty horn-coloured; iris golden yellow.

One egg obtained at Sapucay, October 3, 1903, is pinkish cream-coloured, mottled with reddish brown and underlying spots of lavender-grey. It measures: Axis 1·35 inches; diameter 1·05.

Two eggs collected at Sapucay, October 14, 1903, are cream-coloured, mottled with brown in greater contrast. Axis 1·35 to 1·45 inches; diameter 0·9 to 0·95.

Two eggs procured at Sapucay, October 13, 1903, are pinkish cream-coloured, heavily blotched with brown. Axis 1·45 inches; diameter 1·0.

[A rare bird throughout Central Paraguay. I have only met with two specimens in eight years, but I know of another which was shot at Asuncion.

Occasionally at night it will perch upon some of the tall trees in the forest and give utterance to its peculiar cry, almost like a human cry of pain, gradually falling and dying away into silence.

The common Guarani name for the bird is "Guaimigué," which in Spanish means "que fue vieja,"—an old woman transformed into the bird, which would account in a way for the strange cry. It is resident, as I have heard its cry in October and shot one specimen in November.—*W. F.*]

43. NYCTIDROMUS DERBYANUS.

Ibiyau Azara, Apunt. ii. p. 538. no. cccx. (1805).

Caprimulgus albicollis Vieill. (nec Gm.) Enc. Méth. ii. p. 536 (1822: Paraguay).

Nyctidromus albicollis Berlepsch, J. f. O. 1887, p. 120 (Paraguay); Hartert, Cat. B. Brit. Mus. xvi. p. 587, part. (1892).

Nyctidromus albicollis derbyanus Gould; Hellmayr, Nov. Zool. xii. p. 297 (1905); Ihering, Revista Mus. Paulista, vi. p. 332.

a. ♂ ad. Sapucay, October 8, 1902. Iris dark brown.

b, c. ♂ ♀ ad. Sapucay, April 1903. Feet dark horn-coloured.

d, e. ♂ ♀ ad. Sapucay, March and June 1904.

Four clutches of eggs were collected during the month of October 1903. They vary in ground-colour from greyish pink to creamy, spotted and blotched with pinkish brown and underlying marks of lavender-grey. The measurements are: Axis 1·1 to 1·25 inches; diameter 0·85 to 0·9.

[A fairly common species at Sapucay, frequently met with in the open glades and cattle-tracts in the forest. The eggs, two in number, are laid on the bare ground, but the bird will never rise unless almost stepped upon, and its plumage is hard to detect in the lights and shadows of the woods.—*W. F.*]

44. CAPRIMULGUS PARVULUS.

Caprimulgus parvulus Gould, P. Z. S. 1837, p. 22 (Santa Fé, Rio Parana); Hartert, Cat. B. Brit. Mus. xvi. p. 574 (1892); Ihering, Revista Mus. Paulista, vi. p. 332.

a. ♂ ad. Sapucay, November 18, 1902.

Two eggs were obtained on the same date and another clutch on October 12, 1903. They are pale cream-coloured, blotched with brown and zigzag markings of the same colour, and with underlying blotches of lavender-grey. The measurements are: Axis 1·05 to 1·1 inches; diameter 0·8.

45. CHÆTURA OXYURA.

Vencejillo Azara, Apunt. ii. p. 515. no. cccvii. (1805).

Hirundo oxyura Vieill. N. Dict. d'Hist. Nat. xiv. p. 536 (1817: ex Azara).

Acanthylis oxyura, Hartl. Ind. Azara, p. 19 (1847).

? *Chætura andrei meridionalis* Hellmayr, Verh. Orn. Ges. Bayern, viii. p. 150 (1908).

a. ♀ ad. Sapucay, October 26, 1901.

I have not, so far, been able to identify this Swift quite satisfactorily, as there are no specimens of any of the South American species in the National Collection exactly like it. It appears to me, however, that it is the bird mentioned by Azara and described later by Vieillot.

[In October 1901 I met with two specimens of this bird, but know nothing more about it.—*W. F.*]

46. CHLOROSTILBON AUREIVENTRIS.

Ornismya aureiventris D'Orb. et Lafr. Mag. de Zool. viii. p. 28 (1838).

Chlorostilbon splendidus (nec Vieill.); Berlepsch, J. f. O. 1887, p. 18 (Lambaré); Salvin, Cat. B. Brit. Mus. xvi. p. 49 (1892).

Chlorostilbon aureiventris Hartert, Tierr., Trochilidæ, p. 71 (1900); Sharpe, Hand-list B. ii. p. 112 (1900).

a. ♂ imm. Sapucay, April 7, 1904.

Bill black at tip, rosy pink at base; tarsi and feet black; iris brown.

Mr. Foster says that he obtained this specimen near the house in which he lived.

47. HYLOCHARIS RUFICOLLIS.

Picaflores pecho de Canela Azara, Apunt. ii. p. 484. no. ccxc., juv. (1805).

Picaflores cola de Topacio Azara, t. c. p. 485. no. ccxci., adult.

Trochilus ruficollis Vieill. N. Dict. d'Hist. Nat. vii. p. 362 (1817).

Chrysuronia ruficollis Berl. J. f. O. 1887, p. 18 (Lambaré); Salvin, Cat. B. Brit. Mus. xvi. p. 251.

Hylocharis ruficollis Sharpe, Hand-l. B. ii. p. 110 (1900); Ihering, Revista Mus. Paulista, vi. p. 332.

a. ♂ ad. Sapucay, March 24, 1904.

Bill rosy pink at base, black at tip; feet black; iris brown.

[This species is fairly common throughout the district, its small nest being usually suspended from a blade of thatching-grass or a piece of string hanging from the roof of a house; in fact, any place seems suitable for it.

Two eggs only are laid. This species is one of the early breeders, incubation having been well advanced in one clutch at the end of September.—*W. F.*]

48. THALURANIA ERIPHILE.

Ornismya eriphile Less. Suppl. Ois.-Mouches, p. 148, pl. 25 (1832: Brazil)

Thalurania eriphile Salvin, Cat. B. Brit. Mus. xvi. p. 80 part; Hartert, Tierr., Trochilidæ, p. 86 part (1900); Sharpe, Hand-list B. ii. p. 115 part (1900); Ihering, Revista Mus. Paulista, vi. p. 331.

Chlorostilbon cyanothorax Bertoni, Aves Nuev. Paraguay, p. 59 (1901), *cf.* Ihering, l. c.

Thalurania eriphile eriphile Hellmayr, Nov. Zool. xv. p. 76 (1908).

a. ♂ ad. Sapucay, March 31, 1904. Wing 2·4 inch, tail 1·6 inch.

Bill and feet black. Obtained in the neighbourhood of a dwelling-house. This specimen is fully adult and in newly moulted plumage. It agrees with the diagnosis of the species given by Mr. Hellmayr (*l. c.*).

Mr. Bertoni was the first to record this bird in Paraguay, when he described it as a new species under the title of *Chlorostilbon cyanothorax* (Aves Nuev. Parag. p. 59). Dr. Ihering, however, is of opinion (*l. c.*) that it is identical with *Thalurania eriphile*.

49. TROGON RUFUS.

Couroucou oranga Levaill. Courouc. et Tourac. part iii. p. 14, pls. 7, 8, 15 (1806).

Trogon atricollis Vieill. N. Dict. d'Hist. Nat. viii. p. 318 (1817 : interior of Guiana, Surinam, and Trinidad) ; Grant, Cat. B. Brit. Mus. xvii. p. 455 (1892) ; Sharpe, Hand-l. B. ii. p. 148 (1900).

Trogon rufus Gm. ; Berlepsch, Nov. Zool. xv. p. 277 (1908).

a. ♂ ad. Supucay, July 29, 1904.

Bill greenish yellow ; tarsi and feet slate-coloured ; iris brown.

b. ♀ ad. Sapucay, August 19, 1904.

Bill yellowish green.

c, d. ♂ ad. Sapucay, September 2, 19, 1904.

This bird is new to the avifauna of Paraguay.

[Although not so common as the "Surucura," this species can still be met with occasionally in the large virgin forests along the Cordilleras at Sapucay. I know nothing of the nesting-habits.—*W. F.*]

50. TROGON SURRUCURA.

Surucuá Azara, Apunt. ii. p. 373. no. cclxx. (1805).

Trogon surrucura Vieill. N. Dict. d'Hist. Nat. viii. p. 321 (1817 : ex Azara).

Trogon surucura Berlepsch, J. f. O. 1887, p. 121 (Paraguay) ; Grant, Cat. B. Brit. Mus. xvii. p. 471 ; Sharpe, Hand-list B. ii. p. 149 ; Ihering, Revista Mus. Paulista, vi. p. 334.

a. ♀ ad. Sapucay, June 10, 1904.

Bill pale slate-green ; iris brown.

b. ♂ ad. Sapucay, July 9, 1904.

Bill greenish grey ; feet slate-coloured ; iris brown.

[Resident and not uncommon in this district, and has been met with close to Asuncion. It is by no means a shy bird and can be approached very closely. When disturbed, its flight is very slow and noiseless, not unlike that of an Owl.

I once met with the nest of this bird in an ants' nest that had been built on the side of a tree, in the month of November 1904. As this is one of the most difficult of all birds to skin, the collector feels rather sorry than otherwise when a specimen is met with; the skin is about as tough as wet tissue paper, and the feathers fall out in large clusters at the slightest touch. As may be imagined, the patience of the collector is tried to the utmost before the specimen can be put on one side as a good skin.—*W. F.*]

51. Coccyzus americanus.

Cuculus americanus Linn. Syst. Nat. i. p. 170 (1766: Carolina).

Coccyzus americanus Berlepsch, J. f. O. 1887, p. 133 (Buenos Ayres); Shelley, Cat. B. Brit. Mus. xix. p. 308 (1891).

a. ad. Sapucay, January 12, 1904.

Bill, lower mandible orange-yellow; feet pale slate-coloured; iris brown.

This species does not appear to have been previously recorded from Paraguay, though known from Argentina. I have compared the specimen with others from North America and find it to be identical both in measurements and colour of plumage. It is fully adult and is moulting its primary-quills and tail-feathers.

[A rare species with us here, inhabiting the large forests. I cannot say with certainty whether it is resident or not. —*W. F.*]

52. Coccyzus melanocoryphus.

Ceniciento Azara, Apunt. ii. p. 368. no. cclxviii. (1905).

Coccyzus melanocoryphus Vieill. N. Dict. d'Hist. Nat. viii. p. 271 (1817); Berlepsch, J. f. O. 1887, pp. 24, 121 (Lambaré); Shelley, Cat. B. Brit. Mus. xix. p. 307; Ihering, Revista Mus. Paulista, vi. p. 335.

a. ♀ ad. Sapucay, November 7, 1902.

Iris light brown.

b. ♂ ad. Sapucay, March 13, 1904.

Bill black; tarsi and feet bluish slate-coloured.

There were previously no examples of this species in the British Museum from Paraguay.

[By no means a common bird, but it can occasionally be met with in the large forests.—*W. F.*]

53. PIAYA MACRURA.

Tingazú Azara, Apunt. ii. p. 353. no. cclxv. (1805).

Coccyzus macrocercus Vieill. N. Dict. d'Hist. Nat. viii. p. 275 part (1817).

Piaya macroura Gambel; Berlepsch, J. f. O. 1887, pp. 24, 121 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 335.

Piaya cayana macroura Stone, Proc. Acad. Nat. Sci. 1908, p. 501 (Paraguay).

a. imm. Sapucay, November 19, 1902.

b, c. ♂ ad. Sapucay, March 1903.

d, e. ♂ ♀ ad. Sapucay, April 1903.

f, g. ♂ ♀ ad. Sapucay, May 1903.

Bill pea-green; tarsi and feet dark slate-coloured; iris crimson.

h. ♂ ad. Sapucay, September 27, 1903.

[This species is the "Tingasú" of Azara, and is very common in all the forests and woods, even in the vicinity of Asuncion. It is a quiet, shy bird, slow in its movements, and with a soft flight. Its long tail does not seem to incommode it in the slightest degree. The favourite perch is close up against the trunk of a tree, its chestnut colour assimilating well with the dark bark. I find it the most parasite-infested of all the "monte" birds, and it seems strange how it can tolerate the hundreds of creeping things which make their appearance about the head and neck after death. Without being absolutely sure, I think that its nest is composed of strips of the thin inner bark of trees and that two eggs are laid of a dull creamy-white colour.—*W. F.*]

54. DIPLOPTERUS NÆVIUS.

Cuculus nævius Linn. Syst. Nat. i. p. 170 (1766: Cayenne).

Chochi Azara, Apunt. ii. p. 359. no. cclxvi. (1805), adult.

Chirri Azara, t. c. p. 369. no. cclxix., juv.

Coccyzus chochi Vieill. N. Dict. d'Hist. Nat. viii. p. 272, adult (1817).

Coccyzus chiriri Vieill. t. c. p. 273, juv.

Diplopterus nævius Berlepsch, J. f. O. 1887, p. 24 (Lambaré); Shelley, Cat. B. Brit. Mus. xix. p. 423.

Tapera nævia Lönnberg, Ibis, 1903, p. 239.

a. Ad. Sapucay, July 31, 1904.

Bill, culminal ridge blackish, buff at gape, lower mandible rosy pink; tarsi and feet pale slate-blue; iris buff.

55. Dromococcyx phasianellus.

Macropus phasianellus Spix, Av. Bras. i. p. 53, pl. xlii. (1824: Tonantins and Solimoëns rivers).

Dromococcyx phasianellus Shelley, Cat. B. Brit. Mus. xix. p. 426; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 600 (1906); Ihering, Revista Mus. Paulista, vi. p. 335.

Geophilus jasigatere Bertoni, Aves Nuev. Paraguay, p. 43 (1901), = *Macropus phasianellus* Spix, Richmond, Proc. U.S. Nat. Mus. xxxv. p. 611 (1908).

a. ♂ ad. Sapucay, August 14, 1904.

Bill black above, purple at point and reddish at base below; tarsi and feet brownish slate-coloured; iris whitish brown.

This bird was originally described by Spix from Brazil, and was not known to occur in Paraguay until Mr. Bertoni (Aves Nuev. Paraguay, p. 43) recorded it as a new species under the name of *Geophilus jasigatere*.

56. Crotophaga major.

Crotophaga major Gm. Syst. Nat. i. p. 363 (1788: Cayenne); Hartl. Ind. Azara, p. 17 (1847); Berlepsch, J. f. O. 1887, pp. 23, 121 (Lambaré); Shelley, Cat. B. Brit. Mus. xix. p. 428; Ihering, Revista Mus. Paulista, vi. p. 335 (1906).

Anno-guazú Azara, Apunt. ii. p. 348. no. cclxiv. (1805).

a. ♂ ad. Sapucay, December 31, 1902.

Iris yellowish white.

b. ♀ ad. Ybytimi, February 8, 1904.

Bill, tarsi, and feet black; iris pea-green.

[A rare bird, only to be met with along the large water-courses in the forests.—*W. F.*]

57. Crotophaga ani.

Crotophoga ani Linn. Syst. Nat. i. p. 154 (1766); Hartl. Ind. Azara, p. 17 (1847); Berlepsch, J. f. O. 1887, p. 23 (Lambaré); Shelley, Cat. B. Brit. Mus. xix. p. 429; Ihering, Revista Mus. Paulista, vi. p. 335.

Annó Azara, Apunt. ii. p. 344. no. cclxiii. (1805).

a. ♂ ad. Sapucay, March 27, 1903.

Bill, tarsi, and feet black; iris brown.

b. ♀ ad. Sapucay, April 22, 1903.

c. ♀ ad. ,, April 18, 1904.

The eggs of this species are pale blue, covered with a white chalky substance. The measurements are: axis 1·2 to 1·4 inches; diameter 0·9 to 1·05.

[Communal nest at an elevation of about 18 feet. A number of the birds lay their eggs together until the nest is often so full that many fall out.

The nest is often built in a palm (coco) and is impossible to reach on account of thorns on the trunk of the tree. Boys get the eggs by smashing the nest with stones; they fall out on to the grass and many are unbroken. I have found parasitic eggs on two occasions, but I do not know the parent. As many as twenty eggs are laid in one nest.

This bird is resident and common.—*W. F.*]

58. Guira guira.

Cuculus guira Gm. Syst. Nat. i. p. 414 (1788: Brazil).

Piririgüá Azara, Apunt. ii. p. 340. no. cclxii. (1805); Hartl. Ind. Azara, p. 17 (1847).

Crotophaga piririgua Vieill. N. Dict. d'Hist. Nat. i. p. 549 (1816, ex Azara).

Octopteryx guira Berlepsch, J. f. O. 1887, p. 23 (Lambaré).

Guira guira Shelley, Cat. B. Brit. Mus. xix. p. 433; Ihering, Revista Mus. Paulista, vi. p. 335.

A large number of the eggs of this species were sent, collected during the months of October, November, and January. They are deep blue in colour, with a network of white chalky substance distributed irregularly over the entire surface. A few are almost entirely without any chalky matter, while others are nearly covered with it. The measurements are: axis 1·5 to 1·75 inches; diameter 1·1 to 1·3.

[The nests were usually built in large trees standing alone in the camp. Their presence was often made known by some of the eggs falling to the ground, owing to the large number laid in the nest, which is by no means fit to carry them, as it is a loosely constructed affair.

The species is resident and common. This and the *Crotophaga* often commingle together in one flock, sometimes up to fifty individuals.

The favourite hunting-ground is along the edge of the monte and about open camp.—*W. F.*]

59. RHAMPHASTUS DICOLORUS.

Rhamphastos dicolorus Linn. Syst. Nat. i. p. 152 (1766: Cayenne); Berlepsch, J. f. O. 1887, p. 121 (Paraguay); Sclater, Cat. B. Brit. Mus. xix. p. 133; Ihering, Revista Mus. Paulista, vi. p. 334.

Tucai Azara, Apunt. i. p. 239. no. li. (1802).

a. ♂ ad. Sapucay, March 29, 1904.

Bill pea-green, with a yellowish tinge; tarsi and feet sky-blue; iris greenish white.

b. ♂ ad. Sapucay, June 29, 1904.

c. ♂ ad. „ August 17, 1904.

[A fairly common bird along the summit of the hills at Sapucay, where it is generally met with in small flocks of about half a dozen individuals. Noisy and pugnacious, it seems to have things all its own way when feeding, no other bird being allowed to approach.

Taken young these fine birds can be easily reared, and it is amusing to see large dogs slink away when a bird makes a drive at them with the huge bill opened wide.

Their food is generally fruit, but I think that many caterpillars are devoured as well, and in captivity individuals evince a decided partiality for meat.

Rhamphastus toco Gm. is not uncommon in the southern part of the Republic, but seldom comes north through Central Paraguay. In this district I have rarely met with it, although some years ago I found it common through the orange-groves at Villa del Pelar, in the Province of Neembucú.—*W. F.*]

60. PTEROGLOSSUS CASTANOTIS.

Pteroglossus castanotis Gould, P. Z. S. 1833, p. 119 (Brazil); Scl. Cat. B. Brit. Mus. xix. p. 140; Ihering, Revista Mus. Paulista, vi. p. 335.

Pteroglossus attalorhynchus Bertoni, Aves Nuev. Paraguay, p. 29 (1901); Ihering, l. c.

a. ♀ ad. Sapucay, June 23, 1904.

[Another of the Toucans which is not at all uncommon in this locality. The habits of this and the preceding species appear to be about the same.—*W. F.*]

61. BUCCO CHACURU.

Chacuru Azara, Apunt. ii. p. 330, no. cclxi. (1805).

Bucco chacuru Vieill. N. Dict. d'Hist. Nat. iii. p. 239 (1816, ex Azara); Berlepsch, J. f. O. 1887, pp. 23, 121 (Lambaré); Scl. Cat. B. Brit. Mus. xix. p. 191; Oberh. Proc. U.S. Nat. Mus. xxv. p. 127 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 334.

a. ♀ ad.	Sapucay,	October 26, 1902.	Iris grey.
b. ♀ ad.	,,	December 3, 1902.	Iris light brown.
c, d. ♂ ♀ ad.	,,	April 17, 22, 1904.	
e, f. ♂ ad.	,,	June 5, 25, 1904.	

Bill bright orange-red, upper mandible black at tip; tarsi and feet greenish; iris dirty white.

[Resident and frequently met with along the forest-streams, where the small crabs, and insects flying over the surface of the water form its principal food.—*W. F.*]

62. NONNULA RUBECULA.

Bucco rubecula Spix, Av. Bras. i. p. 51, pl. 39. fig. 1 (1824).

Nonnula rubecula Scl. Cat. B. Brit. Mus. xix. p. 200; Ihering, Revista Mus. Paulista, vi. p. 334; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 598 (1906).

Microtrogon fulvescens Bertoni, Aves Nuev. Paraguay,

p. 41 (1901), = *Bucco rubecula* Spix, Richmond, Proc. U.S. Nat. Mus. xxxv. p. 622 (1908).

a. ♂ ad. Sapucay, December 3, 1902. Iris light brown.
b. ♂ ad. „ April 28, 1904.
c. ♂ ad. „ May 3, 1904.

Bill black, greyish blue at base; tarsi and feet greenish-white.

d, e. ♀ ad. Sapucay, June 1904.
f. ♀ ad. „ July 2, 1904.
g, h. ♀ ad. „ August 1904.

[Resident and not uncommon in the neighbourhood of Sapucay, but I have never met with it in other parts. It lives in the depths of the large forests and is never found near the edge. I have found beetles and crabs in the gizzard of this species, but I know nothing of its nesting-habits.—*W. F.*]

63. COLAPTES CAMPESTRIS.

Carpintero campestre Azara, Apunt. ii. p. 311. no. ccliii. (1805).

Picus campestris Vieill. N. Dict. d'Hist. Nat. xxvi. p. 101 (1818, ex Azara).

Colaptes campestris Berlepsch, J. f. O. 1887, p. 121 (Paraguay); Hargitt, Cat. B. Brit. Mus. xviii. p. 23; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♀ ad. Sapucay, March 31, 1903.
b, c. ♂ ♀ ad. Sapucay, April 19, 24, 1903.

Bill dark horn-coloured; feet slate-coloured; iris brown. Shot in open camp.

64. COLAPTES AGRICOLA.

Geopicos agricola Malh. N. Classif., Mém. Acad. Metz, 1848–1849, p. 359.

Colaptes agricola Hargitt, Cat. B. Brit. Mus. xviii. p. 25; Kerr, Ibis, 1892, p. 135 (Fortin Donovan).

a. ♂ ad. Sapucay, April 20, 1903.

Bill horn-coloured; feet dirty slate-coloured; iris brown. Shot in open camp.

b. ♂ ad. Ybytimi, February 11, 1904.

Bill black; tarsi and feet pale slate-green; iris brown.

[Resident and common throughout Paraguay. Lives exclusively on open lands and rarely or never enters the woods. Its food consists entirely of small ground insects, burrowing wasps, larvæ of flies, &c. It much prefers the clinging to the perching position, its favourite places being solitary dead trees.

This species is generally seen in pairs and often in small flocks of from six to ten individuals. The flight is quick and undulating, and its loud harsh cries can be heard a long distance away.

In Central Paraguay the nest is invariably in a hole of one of the dead trees and never in the bank of a stream. The eggs, five to seven in number, are white and highly polished.—*W. F.*]

65. CHLORONERPES AURULENTUS.

Carpintero verde dorado Azara, Apunt. ii. p. 318. no. cclvi., male (1805).

Carpintero dorado pardo Azara, t. c. p. 320. no. cclvii., female.

Picus auratus Vieill. (nec Linn.), N. Dict. d'Hist. Nat. xxvi. p. 70 (1818), ex Azara, no. cclvii., female.

Picus aurulentus Temm. Pl. Col. iv. pl. 59. fig. 1 (1823: Paraguay and Brazil).

Chloronerpes aurulentus Berlepsch, J. f. O. 1887, p. 120 (Paraguay); Hargitt, Cat. B. Brit. Mus. xviii. p. 79; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♀ ad. Sapucay, April 3, 1903.

Bill horn-coloured, lighter below; feet olive-green; iris brown. Shot in monte.

b. ♀ ad. Sapucay, June 6, 1904.

Bill black, grey below; tarsi and feet dry pea-green.

c. ♀ ad. Sapucay, August 19, 1904.

[This species is rare with us, and I know nothing about it. It is to be met with only in the depths of the large forests.—*W. F.*]

66. CHRYSOPTILUS CRISTATUS.

Carpintero verdinegro Azara, Apunt. ii. p. 306. no. cclii. (1805).

Picus cristatus Vieill. N. Dict. d'Hist. Nat. xxvi. p. 98 (1818, ex Azara).

Chrysoptilus melanochlorus (nec Gm.), Hartl. Ind. Azara, p. 16 (1847); Hargitt, Cat. B. Brit. Mus. xviii. p. 110; Ihering, Revista Mus. Paulista, vi. p. 333 (Paraguay).

a, b. ♀ ad. et imm. Sapucay, November 1902.
c. ♀ ad. Sapucay, December 1, 1902.
d. ♀ ad. „ April 19, 1903.

Bill black; feet greenish yellow; iris brown.

e. ♀ ad. Sapucay, May 7, 1903.

Bill horn-coloured; feet dirty pea-green.

f. ♂ ad. Ybytimi, February 14, 1904.
g. ♀ ad. Sapucay, April 6, 1904.
h. ♂ ad. „ August 28, 1904.

The immature bird, obtained on November 9, has a small bill. The nasal plumes, which are much more developed in the young, appear to wear off in older specimens, leaving the nostrils somewhat exposed. Throat dull white, streaked with black, more pronounced in the old bird. The under surface is dull greenish yellow, and the black markings are pear-shaped. As the bird advances in age these black markings become large rounded spots and the entire under surface, including the throat, is rich golden yellow.

The feet of the young bird are pale horn-coloured in the dried skin, in the adult they are dark lead-coloured.

[This species is resident and the most common of our Woodpeckers excepting *Colaptes agricola*; it can be met with in the small second-growth woods close to Asuncion. Although it is common, I have never found its nest.—*W. F.*]

67. MELANERPES CANDIDUS.

Picus candidus Otto, in Buffon's Naturg. Uebers. xii. p. 251, pl. xxiii. (c. 1772).

Carpintero blanco y negro Azara, Apunt. ii. p. 315. no. ccliv. (1805).

Picus dominicanus Vieill. N. Dict. d'Hist. Nat. xxvi. p. 72 (1818).

Leuconerpes candidus Berlepsch, J. f. O. 1887, p. 21 (Lambaré).

Melanerpes candidus Hargitt, Cat. B. Brit. Mus. xviii. p. 148; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♂ ad. Ybytimi, February 6, 1904.
b. ♂ ad. Sapucay, March 22, 1904.

Bill horn-coloured above, slaty below; tarsi and feet pea-green; iris white.

[This peculiar Woodpecker appears at very long intervals at Sapucay, and always in flocks of from ten to fifteen individuals, never alone. It has the reputation of living principally upon bees and wasps, and breaking open the nests, built in the trees, to get at the larvæ—its gregarious habits somewhat bearing out this statement. I met with it during the month of January in a small wood some six miles from Asuncion and have seen it in different months of the year at Sapucay, but in the southern parts of the Republic I never saw one.—*W. F.*]

68. MELANERPES FLAVIFRONS.

Carpintero vientre roxo Azara, Apunt. ii. p. 316, no. cclv. (1805).

Picus flavifrons Vieill. N. Dict. d'Hist. Nat. xxvi. p. 75 (1818: Brazil).

Melanerpes flavifrons Berlepsch, J. f. O. 1887, p. 120 (Paraguay); Hargitt, Cat. B. Brit. Mus. xviii. p. 161; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♂ ad. Sapucay, November 29, 1902.
b. ♂ ad. „ May 30, 1903.

Bill horn-coloured above, slate-coloured below; tarsi and feet greenish slate-coloured; iris warm brown.

c. ♂ imm. Sapucay, March 22, 1904.
d. ♀ ad. „ April 25, 1904.
e. ♂ ad. „ May 8, 1904.
f. ♂ ad. „ June 5, 1904.
g. ♀ ad. „ August 25, 1904.

[This species is not uncommon in the large forests of Central Paraguay. The Woodpeckers differ so slightly in their habits that there is but little to say about them, unless their nests are found. They are among the early breeders; I found one nestling able to fly and in fairly advanced plumage on the 5th of November, 1901.—*W. F.*]

69. VENILIORNIS OLIVINUS.

Picus olivinus Malh. Mém. Soc. Roy. Sc. Liège, 1845, p. 67.

Chloronerpes olivinus Berlepsch, J. f. O. 1887, pp. 20, 120 (Lambaré).

Dendrobates olivinus Hargitt, Cat. B. Brit Mus. xviii. p. 356; Kerr, Ibis, 1892, p. 136 (Fortin Nueve).

Veniliornis olivinus Sharpe, Hand-list B. ii. p. 222 (1900); Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♂ ad. Sapucay, October 29, 1902.
b. ♂ ad. „ March 28, 1903.

Bill horn-coloured above, slate-coloured below; tarsi and feet dark slate-coloured; iris brown.

c. ♀ ad. Sapucay, April 21, 1904.
d. ♂ ad. „ May 5, 1904.
e. ♀ ad. „ June 8, 1904.
f, g, ♂; *h.* ♀ ad. Sapucay, July 2, 26, 1904.
i, k. ♀ ad. Sapucay, September 3, 7, 1904.

70. VENILIORNIS SPILOGASTER.

Picus spilogaster Wagl. Syst. Av., Picus, sp. 59, p. 33 (1827: Brazil and Paraguay).

Dendrobates spilogaster Hargitt, Cat. B. Brit. Mus. xviii. p. 358.

Veniliornis spilogaster Sharpe, Hand-l. B. ii. p. 222 (1900); Oberh. Proc. U.S. Nat. Mus. xxv. p. 128 (1902: Sapucay).

a, b. ♀ ad. Sapucay, April 5, 20, 1903.

Bill black above, whitish grey below; feet slate-coloured; iris brown.

c. ♂ imm. Sapucay, March 12, 1904.
d, e. ♂ ♀ ad. „ May 2, 4, 1904.
f. ♀ ad. „ June 24, 1904.

[This species, although somewhat rare, can, in common with all the Woodpeckers, be easily found when present, on account of its tapping when in search of food.

Both this bird and *V. olivinus* inhabit the large dense forests of Central Paraguay. It is harder to obtain than the larger Woodpeckers, on account of its custom of keeping among the higher branches of the trees. I have met with it from March to September.—*W. F.*]

71. CELEUS KERRI.

Celeus kerri Hargitt, Ibis, 1891, p. 605 (Rio Pilcomayo); Kerr, Ibis, 1892, p. 136, pl. iii. (near Fortin Donovan).

Celeus lugubris Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♂ ad. Sapucay, November 15, 1902.

Iris dark crimson.

b. ♀ ad. Sapucay, December 1, 1902.

Iris ruby-brown.

c. ♂ ad. Sapucay, March 27, 1903.

d. ♀ ad. „ May 8, 1903.

Bill light slate-coloured; feet dull black; iris brown.

e. ♀ imm. Ybytimi, January 29, 1904.

Bill slate-coloured above, paler below; tarsi and feet dark slate-coloured; iris brown.

f, g. ♂ ♀ ad. Sapucay, August 17, 20, 1904.

[This is another of our rare Woodpeckers, whose favourite haunts are the larger forests. The young, previous to their first moult, are much lighter in colour, with the edges of the feathers on the breast and belly tipped with rufous, while the rufous bars across the primaries are much wider, and the crest is fully half an inch shorter. The upper tail-coverts of the immature bird are of an entirely dark chestnut, whilst the adult bird has large black patches on each of these feathers, the ground-colour of which is the same.—*W. F.*]

72. CAMPOPHILUS ROBUSTUS.

Carpintero y cuello roxos Azara, Apunt. ii. p. 301. no. ccl. (1805).

Picus robustus Licht. Verz. Doubl. p. 10 (1823: Bahia).

Campophilus robustus Hartl. Ind. Azara, p. 16 (1847); Berlepsch, J. f. O. 1887, p. 120 (Paraguay); Hargitt, Cat. B. Brit. Mus. xviii. p. 477; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♂ ad. Sapucay, October 14, 1902.
b. ♂ ad. „ March 25, 1903.

Bill cream-coloured to grey at base, darker above; feet dark slate-coloured; iris yellow.

c. ♀ ad. Sapucay, May 6, 1903.
d, e. ♀ ad. „ July 17, 19, 1904.
f. ♂ ad. „ September 3, 1904.

[Another of the large Woodpeckers, only to be met with in the virgin forests.—*W. F.*]

73. CEOPHLŒUS LINEATUS.

Picus lineatus Linn. Syst. Nat. i. p. 174 (1766: Cayenne).

Carpintero negro Azara, Apunt. ii. p. 294. no. ccxlviii. (1805).

Ceophlœus lineatus Berlepsch, J. f. O. 1887, p. 23 (Lambaré); Hargitt, Cat. B. Brit. Mus. xviii. p. 508; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♀ ad. Sapucay, May 2, 1903.

Bill dark grey above, light beneath; tarsi and feet dark slate-coloured; iris white.

b. ♂ ad. Sapucay, June 22, 1904.
c. ♀ ad. „ August 29, 1904.

[This species occurs in the same localities as *C. erythrops*, but is much rarer. It can easily be distinguished, even in the dim forests, by the white band down either side of the wing-coverts.—*W. F.*]

74. CEOPHLŒUS ERYTHROPS.

Picus erythrops Valenc. Dict. Sci. Nat. xl. p. 178 (1826).

Ceophlœus erythrops Hargitt, Cat. B. Brit. Mus. xviii. p. 512; Ihering, Revista Mus. Paulista, vi. p. 333.

a. ♀ ad. Sapucay, October 23, 1902.
b. ♂ ad. „ May 4, 1903.

Bill dark grey above, pale below; tarsi and feet slate-coloured; iris white.

c. ♂ ad. Sapucay, March 14, 1904.

Bill horn-coloured above, grey below; tarsi and feet slate-coloured; iris orange-white.

d. ♀ ad. Sapucay, August 18, 1904.

e. ♂ ad. „ September 11, 1904.

Bill slaty horn-coloured above, whitish grey below; tarsi and feet slate-coloured.

Three eggs, obtained on the 23rd of October, 1902, are glossy- or ivory-white in colour with a few dark minute dots, and measure: axis 1·1 to 1·2 inches; diameter 0·95.

[This fine species occurs all through Central and Southern Paraguay and in the large forests is not uncommon. Owing to the strength of this bird, its tapping can be heard at a great distance, making it easy to secure specimens.—*W. F.*]

75. CEOPHLŒUS GALEATUS.

Picus galeatus Temm. Pl. Col. iv. pl. 171 (1823: Brazil).

Ceophlœus galeatus Hargitt, Cat. B. Brit. Mus. xviii. p. 513; Ihering, Revista Mus. Paulista, vi. p. 333.

Campephilus rufifrons Bertoni, Aves Nuev. Paraguay, p. 49 (1901); *teste* Ihering, l. c.

a. ♂ ad. Sapucay, July 7, 1904.

Bill whitish at point, grey at base.

b. ♀ ad. Sapucay, August 22, 1904.

Bill creamy grey; tarsi and feet slate-coloured; iris reddish brown.

[Another of our very rare Woodpeckers, and I know nothing much about it yet.—*W. F.*]

76. PICUMNUS PILCOMAYENSIS.

Picumnus pilcomayensis Hargitt, Ibis, 1891, p. 606 (Rio Pilcomayo); Kerr, Ibis, 1892, p. 138 (Fortin Page).

Picumnus cirratus (nec Temm.), Oberh. Proc. U.S. Nat. Mus. xxv. p. 128 (1902: Sapucay).

Picumnus cirrhatus Ihering, Revista Mus. Paulista, vi. p. 334.

a. ♀ ad. Sapucay, December 9, 1902.

b, c. ♂ ♀ ad. Ybytimi, February 4, 7, 1904.

♂. Bill black above, slate-coloured below; tarsi and feet slate-coloured.

♀. Bill buff, black above; tarsi and feet bluish slate-coloured.

[This species is not uncommon through the large forests. Its habits are slightly different from those of the Woodpeckers proper, as it perches and hunts for food more along the branches than on the trunks of trees. It is a very shy bird and the slightest unusual rustling noise will at once cause it to cease pecking, when owing to its small size it is not easily discovered. It is protected by a particularly offensive odour, such as arises from a place infested by cockroaches, but much stronger; this smell becomes less evident after the bird is skinned, but often lasts for years.

The nest is a hole made in a tree to the depth of some six or eight inches, two white eggs being laid; there is no lining other than the chips of wood.—*W. F.*]

[To be continued.]

XI.—*On the Monkey-eating Eagle of the Philippines* (Pithecophaga jefferyi *). By D. Seth-Smith, F.Z.S., M.B.O.U.

(Plate IV. and Text-fig. 4.)

The acquisition, by the Zoological Society of London, of a fine living specimen of the magnificent Monkey-eating Eagle, seems to present a fitting opportunity of collecting together the few scattered notes that have been published on this remarkable species, and of figuring it from life.

Pithecophaga jefferyi was described at the Meeting of the British Ornithologists' Club, held on December 16th, 1896, by Mr. Ogilvie-Grant, who assigned it to a new genus, which he considered to be most closely allied to *Harpyhaliaëtus* of South America. The type-specimen was obtained by John Whitehead in the forests of Samar, during his successful expedition to the Philippines of 1894–7.

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* *Pithecophaga jefferyi* Ogilvie-Grant, Bull. B. O. C. vi. p. xvii (1896); Ibis, 1897, p. 214, pl. v.; Whitehead, Ibis, 1899, p. 91; Mearns, Proc. Biol. Soc. Wash. xviii. p. 76; Clemens, Condor, ix. p. 92; McGregor, Philipp. Journ. Sc., Oct. 1907, p. 297.

During that naturalist's first expedition to the island in 1895 he failed to meet with this species, though he made a fine collection of other birds, which were destroyed by fire on board ship in Singapore. This great misfortune resulted in his returning to Samar, where his loss was fully compensated by the discovery of the extraordinary *Pithecophaga* in the high forests which still remain on the Pacific Coast of that island. "In these lofty forests," writes Mr. Whitehead, "the Great Philippine Eagle has made his home, with no enemies to trouble him. He is well known to the natives as a robber of their poultry and small pigs, but chiefly as a destroyer of monkeys, which are the only animals sufficiently abundant in the forests to support such a large bird."

Mr. Whitehead had noticed these large Eagles flying along the edge of the forest, but had failed to secure a specimen, until one morning his servant managed to put a single buckshot from an old muzzle-loading gun into the neck of a specimen as it settled on the top of a high tree. Mr. Whitehead estimated the weight of this specimen at between 15 and 20 lbs. At the collector's request the species was named after his father, Mr. Jeffery Whitehead, by whose generosity the expedition had been carried out.

The United States National Museum received a specimen of *Pithecophaga* from Mr. Fletcher L. Keller, a hemp-planter of Davao, Mindanao, which was the second example to reach America, and the first authentic record of its occurrence in Mindanao. This gentleman saw one in a collection of birds in the Public Library of Minneapolis, U.S.A., and one in Manila, but knew of only five preserved specimens altogether. Mr. Keller's specimen, a male, was taken near Davao on

Sept. 3rd, 1904, and is said to resemble the type closely but to possess broader shaft-stripes to the feathers, giving the head a darker colour than that described by Mr. Ogilvie-Grant.

Capt. Joseph Clemens has published in the 'Condor' a photograph of a living specimen which he had kept in a cage. It was brought into the market by the Moros, and purchased by Lieut. Farrell of the 15th Infantry, U.S.A. When a chicken was put into the cage it would take it when hungry and eat it all, but otherwise only the entrails were devoured. Unfortunately this bird broke its leg in trying to force its way out of its cage, and had to be killed.

Capt. Clemens proceeds: "I have since skinned and have in my collection another specimen, and in this one I found a monkey, not yet digested. The paws were torn off and swallowed whole, then the next joint, and so on. It was eaten hair and all."

Mr. Richard C. McGregor refers to these two specimens in 'The Philippine Journal of Science' for October, 1907, and to a third specimen procured by Mr. Ickis, Geologist of the Bureau of Science, on May the 11th, 1907. This was apparently the first that was recorded from the island of Luzon. The head, one wing and one foot only were brought to Manila.

The specimen which has recently come into the possession of the Zoological Society of London was secured through the untiring efforts of Mr. Willoughby P. Lowe, who has kindly supplied me with the following notes on it from his notebook of 1907.

"There are in the museums of Manila four mounted specimens:—two belonging to St. Thomas' University—from Mindanao and Samar; and two in the museum belonging to the Jesuit Fathers, one of which has been exchanged with the Bureau of Science. Mr. McGregor also possesses the head and feet of another specimen in spirit.

"After making inquiries as to which would be the most likely place to find *Pithecophaga jefferyi* near Manila, for I had only twelve days left before leaving the Islands, I was recommended to try Antipolo and Bosoboso, a mountainous district north-east of Manila.

"Aug. 10th, 1907. Left Manila for Antipolo.

"Aug. 11th. After breakfast walked some miles into the surrounding hills—country not very promising, main range of mountains probably ten miles off. Inquiries showed Bosoboso impossible, as I had no camping outfit or transport.

"Aug. 12th. Left early for San Mateo. Spent some hours making inquiries and was advised to try Montalban, the terminus of the Railway. A lovely spot and very promising-looking mountains for Eagles. Inquiries from natives as to prospect of finding large Eagles not promising, unless I was prepared to go a journey of some weeks northwards, where they could find Eagles large enough to prey on full-grown deer!

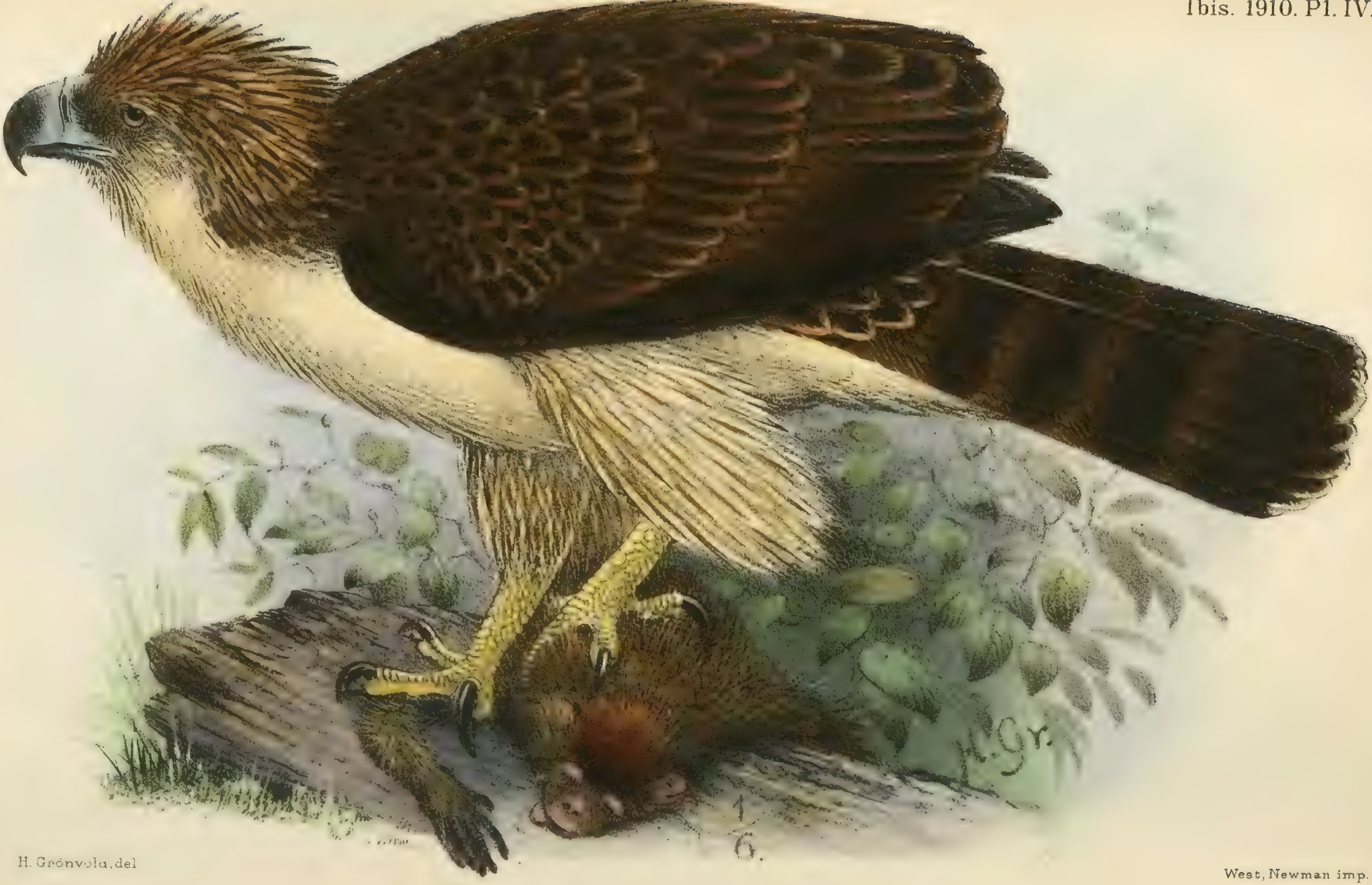
"13th. Went with a guide to a cañon about five miles off, and followed the stream as far as we could get along it, but saw nothing of interest. After resting awhile decided to return home and climb to the mountains the following day. Had not returned far, however, before I had the pleasure of seeing two specimens of the much desired Eagle flying high over my head and close together. I watched them closely until they eventually disappeared up the cañon, passing just over the tops of some small trees that were growing amongst some rocks on a high projecting point in the bend of the ravine.

"14th. Left very early and climbed with much difficulty to the point over which the birds had passed the day before. Waited until long past the time at which they had previously passed, but no Eagles could be seen. As rain was falling returned home disappointed.

"15th. Very wet, mountains buried in clouds. Wet season evidently commenced, so returned to Manila for Hong-Kong.

"16th. Made final plans with Padre F. Llanos and others to secure me a specimen."

Ibis. 1910. Pl. IV.



H. Grönvold, del

West, Newman imp.

PITHECOPHAGA JEFFERYI.

Mr. Willoughby Lowe afterwards received a letter from Father Llanos, dated Jan. 12th, 1909, saying that at last a specimen had been captured alive in Mindanao. It was caught in a noose set by natives, a small pig having been used as a bait. A second letter, dated May 3rd, 1909, stated that the bird was doing well in a large cage and renewing its tail-feathers.

On July 13th this Eagle left Manila for Liverpool in the Spanish Mail Steamer 'Claudio Lopez y Lopez,' and was fed on chickens during the voyage; it duly arrived at the London Zoological Gardens on the last day of August, 1909.

The *Pithecophaga* appeared to do well from the first, readily taking newly-killed pigeons, which it seemed to prefer to rabbits or other small mammals. Needless to say, monkeys were not available as food.

On comparing the specimen with a Harpy Eagle in the next cage, the points of difference that struck me most were the much deeper and narrower bill, longer tail, and smaller feet. It reminded me somewhat of a huge Goshawk.

Mr. Lowe tells me that these birds in a wild state are said to utter a loud cry which can be heard at a considerable distance; but the captive specimen was never heard to utter more than a very faint note.

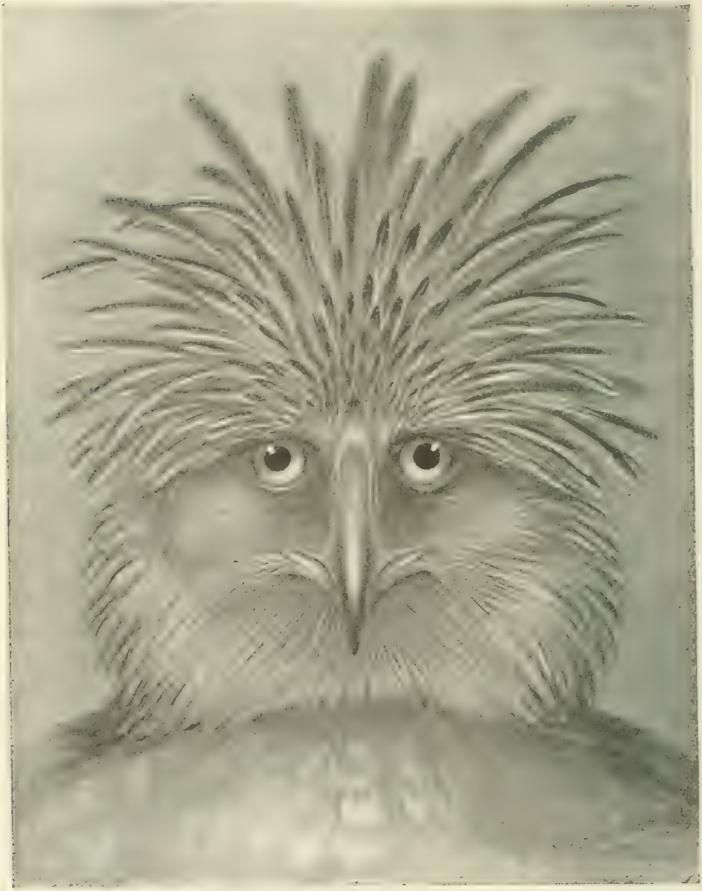
On the 8th of February, 1910, this Eagle refused its food for the first time, and on the following day looked decidedly "out of sorts," though it was impossible to determine what was wrong with it. It died three days later, the *post mortem* revealing tuberculosis as the cause of death.

The atmosphere of London must be so very different from the pure air of the mountainous regions where this species has its home, that perhaps it is not surprising that it should be susceptible to a disease which is all too prevalent in large towns; but the loss of this fine bird, the first of its kind to reach any Zoological Garden, is very much to be regretted. It is satisfactory to know that the specimen, which proved to be a female, has been well mounted by Rowland Ward and is now exhibited in the Natural History Museum.

Mr. Grönvold's excellent drawing from life (Plate IV.)

represents the bird in a very characteristic attitude and may be compared with the plate in the 'Ibis' for 1897, p. 214, which was drawn from the type skin; while the text-figure herewith, which shews a front view of the head with the ruff extended, gives a very good impression of the extraordinary appearance of the bird when viewed from the front at a short distance.

Text-fig. 4.



Head of the Monkey-eating Eagle.

XII.—*On a Collection of Birds made in Northern Somaliland by Mr. G. W. Bury.* By D. A. Bannerman, B.A., M.B.O.U.

The following paper is based on a collection of birds obtained by Mr. G. W. Bury in Northern Somaliland. Mr. Ogilvie-Grant had made arrangements that Mr. Bury should investigate the high ranges behind Cape Guardafui, making his way then by sea from Berbera to Bunder Mureya, and thence striking inland to the high ground, but unfortunately this plan had to be abandoned owing to numerous difficulties, the Italian Government refusing to grant him the necessary permission to land. Mr. Bury therefore confined his labours to the country between Dubar and Burao. The majority of the birds were obtained in the Waghar district, which he made his head-quarters from the end of June to November, 1905.

Below I have given a list of the localities which he visited, together with the approximate dates and altitudes at which birds were collected.

Dubar,	400 ft.	May and June, 1905.
Geloko,	3000 ft.	June and December 1905, and January 1906.
Libah Rajaz,	3400 ft.	June, 1905.
Ragar,	4000 ft.	
Ragar Plateau,	4200 ft.	
Waghar,	6000 ft.	June to November, 1905.
Burao,		December 1905 to June 1906.

Two new species were discovered, namely, a small Rail, *Sarothrura buryi* Grant, from Dubar; and a new Flycatcher, *Muscicapa somaliensis* Bannerman, from Waghar and Burao.

The great value of this collection lies in the fact that a very large series of the birds was obtained in the hot summer months—May, June, July, and August, when very few collectors are in the field. Hence Mr. Bury secured examples of many species in summer-plumage which the British Museum did not possess before.

Throughout this paper Dr. Reichenow's work 'Die Vögel Afrikas' is quoted as "Reich."

My sincere thanks are due to Mr. Ogilvie-Grant, of the British Museum, for his kindness in allowing me to work out this interesting collection, and for the great help he has given me throughout; also to his attendant Mr. Wells for much valuable assistance.

Family STURNIDÆ.

DILOPHUS CARUNCULATUS (Gmel.).

Perissornis carunculatus Reich. ii. p. 670 (1903).

a, b. ♂ ♀. Dubar, 10th & 11th June, 1905.

Iris pale brown; bill horn-coloured; upper mandible darker than the lower; gape yellow; legs and feet grey with a brownish tinge.

PHOLIDAUGES LEUCOGASTER (Gm.).

Cinnyricinclus leucogaster Reich. ii. p. 679 (1903).

a–e. ♂ ♀ et ♂ imm. Dubar, 12th–30th May, 1905.

A female shot on the 28th of May had well-developed eggs in the ovary.

One bird shot on the 26th of May is in the brown plumage of the female, but the spots on the throat and breast are larger and darker.

Another shot on the 28th of May, and marked "male," is also in plumage similar to that of the female, but has a few irregular metallic feathers on the back and secondary coverts.

An example shot on the 30th of May in the plumage of the fully adult male is said by Mr. Bury to be a female, and he notes that "the ovary contained unmistakable eggs." If the sex of this bird has been correctly ascertained, and the bodies have not been mixed in the skinning, it seems to prove the correctness of the view held by some ornithologists, that the adult female in North-East African birds becomes metallic like the male. This is alluded to by Dr. Sharpe in the 'Catalogue of the Birds in the British Museum' (xiii. p. 122).

It must be remarked that in many instances the sexes of the birds in the present collection have been wrongly ascertained by Mr. Bury, and therefore that no great reliance can be placed on his determinations.

LAMPROCOLIUS CHALYBEUS (Hempr. & Ehrenb.).

Lamprocolius chalybæus Reich. ii. p. 687 (1903).

Lamprocolius chalybeus Lort Phillips, Ibis, 1898, p. 394.

a. ♂. Dubar, 2nd July, 1905.

b–g. ♂ ♀ et ♂ imm. Waghar, 8th July–14th Oct., 1905.

Iris bright orange-yellow ; bill, legs, and feet black.

All the specimens from Dubar and Waghar have the shoulder spot violet. In immature birds this shoulder spot is much duller than in the adults.

HETEROPSAR ALBICAPILLUS (Blyth).

Spreo albicapillus Reich. ii. p. 678 (1903).

Heteropsar albicapillus Lort Phillips, Ibis, 1898, p. 395.

a–d. ♂ ♀ et imm. Waghar, 7th July–4th Nov., 1905.

e. ♂. Geloko, 6th Dec., 1905.

f–k. ♂ ♀. Burao, 31st Jan.–23rd Mar., 1905.

Immature. Bill orange tipped with blue-black ; legs and feet black.

Young birds procured in July and August have the under parts as far as the belly light ashy-brown, the white streaked feathers of the adult plumage making their appearance subsequently.

SPREO SUPERBUS (Rüpp.).

Spreo superbus Reich. ii. p. 674 (1903) ; Lort Phillips, Ibis, 1898, p. 396.

a. ♂. Geloko, 20th June, 1905.

b–k. ♂ ♀. Waghar, 25th Aug.–4th Nov., 1905.

l–a'. ♂ ♀. Burao, 27th Dec., 1905–14th Jan., 1906.

SPREO SHELLEYI Sharpe.

Spreo hildebrandti shelleyi Reich. ii. p. 677 (1903).

a–k. ♂ ♀ et ♂ ♀ imm. Waghar, 30th June–1st Sept., 1905.

l–m. ♂ et ♂ imm. Burao, 8th Dec., 1905–4th Mar., 1906.

Iris orange (male); pale yellowish-green (female). Bill, legs, and feet black.

The British Museum contains two examples of this rare Starling,—the type-specimen, an adult from Somaliland collected by Mr. Lort Phillips, and an immature male from Webbi Shebeyli procured by Mr. F. Gillett. Mr. Bury obtained a small series of examples including three adults and a number of immature specimens, which shew all the changes in plumage from the very young bird, with the breast-feathers brownish-buff streaked with dark brown, to the adult.

COSMOPSARUS REGIUS Reichenow.

Cosmopsarus regius Reich. ii. p. 713 (1903).

a–q. ♂ ♀. Burao, 5th Jan.–20th Mar., 1906.

A fine series of this splendid Starling, all in fully adult plumage.

AMYDRUS BLYTHI Hartl.

Amydrus blythi Lort Phillips, Ibis, 1898, p. 395; Grant, Nat. Hist. Sokotra and Abd-el-Kuri, p. 23 (1903).

a–f. ♂ ♀ et ♂ ♀ imm. Dubar, 1st May–1st June, 1905.

g–n. ♂ ♀ et ♀ imm. Waghar, 10th July–28th Oct., 1905.

The immature female does not possess the grey head and hind-neck of the adult, but resembles the adult male, lacking, however, the marked purplish gloss on the feathers of the head and back, while the breast is of a dull brown colour.

[Always seen in flocks feeding on wild figs; the birds had not paired on the 12th of May.—*G. W. B.*]

BUPHAGA ERYTHRORHYNCHA (Stanl.).

Buphagus erythrorhynchus Reich. ii. p. 667 (1903).

a. ♂. Waghar, 15th July, 1905.

Family DICRURIDÆ.

BUCHANGA ASSIMILIS (Bechst.).

Buchanga assimilis Lort Phillips, Ibis, 1898, p. 396.

Dicrurus afer Reich. ii. p. 646 (1903).

a–b. ♂ ♀. Geloko, 20th June, 1905.

c–n. ♂ ♀ et ♂ ♀ imm. Waghar, 2nd July–23rd Oct., 1905.

o–p. ♂ ♀ et ♀ imm. Burao, 17th Oct., 1905–22nd Jan., 1906.

A curious light-coloured example shot on the 1st of September has the plumage pale brown, the primary quills and tail-feathers being of a soiled white. The bird is in much worn plumage.

Family PLOCEIDÆ.

ESTRILDA NIGRIMENTUM Salvad.

Estrilda nigrimentum Reich. iii. p. 190 (1904).

a. ♂. Waghar, 12th Aug., 1905.

Bill dark slate-coloured, black at the tip; legs and feet black.

GRANATINA IANTHINOGASTRA Reichenow.

Uræginthus ianthinogaster Reich. iii. p. 211 (1904).

a–d. ♂ ♀. Waghar, 25th Aug.–8th Nov., 1905.

Bill and orbital circle vermilion; legs and feet black.

ANAPLECTES MELANOTIS (Lafr.).

Anaplectes melanotis Reich. iii. p. 26 (1904).

a, b. ♂ ♀. Waghar, 30th June–23rd July, 1905.

Iris brown; bill pale vermilion; legs and feet brown washed with white.

HYPHANTORNIS VITELLINA (Licht.).

Ploceus vitellinus Grant, Ibis, 1900, p. 133; Reich. iii. p. 81 (1904).

a, b. ♂ ♀ et ♂ ♀ imm. Waghar, 14th–30th Oct., 1905.

c, d. ♂. Burao, 9th Dec., 1905, 21st Feb., 1906.

DINEMELLIA DINEMELLI (Rüpp.).

Dinemellia dinemelli Lort Phillips, Ibis, 1898, p. 397; Reich. iii. p. 7 (1904).

a. ♂. Geloko, 6th Dec., 1905.

b–l. ♂ ♀ et imm. Waghar, 30th June–4th Nov., 1905.

m–v. ♂ ♀. Burao, 6th Jan.–24th Feb., 1906.

On the label of a bird shot on July 27th at Waghar, Mr. Bury remarks "apparently just arriving from the plains below."

Family FRINGILLIDÆ.

RHYNCHOSTRUTHUS LOUISÆ Lort Phillips.

Rhynchostruthus louisæ Lort Phillips, Ibis, 1898, p. 398, pl. viii.; Reich. iii. p. 280 (1904).

a–k. ♂ ♀. Waghar, 15th Aug.–28th Nov., 1905.

Bill dark slate-coloured; legs and feet dark brown.

Mr. Bury obtained a small series of this fine Finch from Waghar. In 1897 Mr. Lort Phillips found it in the same locality, and single examples were also obtained by him from the Sheihk Pass in 1895 and 1897. This species was fully described and figured in the 'Ibis' for 1898. Mr. Bury met with this species singly; it was feeding on the fruit of the tall candelabra-cactus, where its sparrow-like attitude betrayed it. In South Arabia the allied form *R. percivali* Grant (Bull. B. O. C. xi. p. 30) was usually met with in flocks.

PETRONIA PYRGITA (Heugl.).

Petronia pyrgita Lort Phillips, Ibis, 1898, p. 397; Reich. iii. p. 245 (1904).

a. ♂ imm. Dubar, 26th May, 1905.

b–m. ♂ ♀ et ♂ ♀ imm. Waghar, 6th July–18th Dec., 1905.

o–p. ♂ ♀. Burao, 10th & 30th Jan., 1906.

PASSER CASTANOPTERUS Blyth.

Passer castanopterus Lort Phillips, Ibis, 1898, p. 397; Grant, Ibis, 1901, p. 624: Reich. iii. p. 242 (1904).

a, b. ♂ ♀. Dubar, 3rd & 8th June, 1905.

c. ♂. Waghar, 1st July, 1905.

d–u. ♂ ♀. Burao, 15th Dec., 1905–15th Feb., 1906.

Bill purplish horn-coloured; lower mandible pale mauve; gape yellow; legs and feet pale horn-coloured or silvery grey.

The bird obtained on the 3rd of June was the first Sparrow of this species seen by Mr. Bury, so we may conclude that it was not very plentiful in that locality. An example labelled "male, Waghar, 1st July, 1905," is in the plumage of a female, for which Mr. Bury first mistook it, but he notes that on dissection the testes were plainly visible.

As the female of this species does not appear to have been described, I add the following description:—

Adult female. Entire upper parts brownish-grey, the feathers on the mantle tipped with blackish-brown; a broad buff superciliary streak; under parts light yellowish white, washed with greyish on the throat and breast.

It most nearly resembles *Passer yatei* Sharpe, but lacks the pronounced yellow band across the fore-neck. It is also allied to *P. cinnamomeus* Gould, but in this latter species the upper parts are much darker and the lower back is washed with rufous.

PASSER SWAINSONI (Rüpp.).

Passer swainsoni Reich. iii. p. 229 (1904).

a. ♂. Dubar, 29th May, 1905.

POLIOSPIZA TRISTRIATA (Rüpp.).

Poliospiza pallidior Lort Phillips, Ibis, 1898, p. 398.

Poliospiza tristriata Reich. iii. p. 259 (1904).

a–m. ♂ ♀ et ♂ ♀ imm. Waghar, 1st July–31st Oct., 1905.

Iris brown; bill horn-coloured; legs and feet pale brown; toes dark brown.

Mr. Lort Phillips has separated the Somaliland bird from *P. tristriata* under the name of *P. pallidior*, on the ground that the former is very much greyer on the breast and sides of the body; he also mentions the dark colour of the bill as a conspicuous character. I have compared the series of birds obtained by Mr. Bury at Waghar with a series of *P. tristriata* in the British Museum, and also with Mr. Lort Phillips' examples from Somaliland, and I cannot see the necessity of separating them under different specific names; the colour of the breast in at least two specimens procured by Mr. Bury is exactly similar to that of an example from Abyssinia, and though in some examples from Somaliland the belly is certainly whiter than in birds from Abyssinia, there are others from that country which shew as much white on the lower surface as the type of *P. pallidior*. Immature birds of both races are indistinguishable.

Serinus maculicollis Sharpe.

Serinus maculicollis Lort Phillips, Ibis, 1898, p. 399; Reich. iii. p. 269 (1904).

a, b. ♀ et ♀ imm. Waghar, 19th Aug., 1905.

c. ♀. Burao, 8th Jan., 1906.

Bill dark horn-coloured; lower mandible lighter; legs and feet brownish slate-coloured.

Emberiza hortulana Linn.

Emberiza hortulana Reich. iii. p. 281 (1904).

a–h. ♂. Waghar, 25th Sept.–19th Oct., 1905.

Bill reddish-brown; legs, feet, and toes pale brown. All the above-mentioned specimens, with one exception, have the breast deeply streaked with dark brown.

Emberiza poliopleura Salvad.

Emberiza poliopleura Reich. iii. p. 286 (1905).

a, b. ♂ et ♂ imm. Waghar, 7th Aug.–17th Oct., 1905.

Upper mandible dark brown with a purplish tinge; lower mandible pale flesh-coloured; legs and feet greenish-brown.

Fringillaria tahapisi (A. Smith).

Fringillaria tahapisi Lort Phillips, Ibis, 1898, p. 399; Reich. iii. p. 289 (1904).

a–c. ♂. Waghar, 6th July–6th Oct., 1905.

Fringillaria saturatior Sharpe.

Fringillaria saturatior Reich. iii. p. 292 (1904).

a–c. ♂ ♀. Dubar, 7th–8th June, 1905.

Mr. Bury notes that this Bunting was "always found near water." It appears to be a slightly smaller and darker form of *F. striolata* Licht.

F. striolata.	*F. saturatior.*
Wing: ♂ 3·1 in., ♀ 3·1 in.	Wing: ♂ 2·85–2·9 in., ♀ 2·75–2·8 in.

Family Alaudidæ.

Mirafra gilletti Sharpe.

Mirafra gilletti Lort Phillips, Ibis, 1898, p. 401; Shelley,

B. Afr. iii. p. 35, pl. xv. fig. 1 (1902); Reich. iii. p. 333 (1904).

a. ♂. Ragar plateau, 23rd June, 1905.

b. ♀. Burao, 8th Feb., 1906.

GALERIDA CRISTATA (Linn.).

Galerita cristata Lort Phillips, Ibis, 1898, p. 401.

Galerida cristata senegalensis (Müll.), Reich. iii. p. 359 (1904).

a–m. ♂ ♀ et ♂ ♀ imm. Waghar, 24th June–1st Dec., 1905.

Bill, upper mandible dark slate-coloured, lower mandible bluish buff; legs, feet, and toes pale buff.

These birds belong to the form which is known as *G. senegalensis.*

AMMOMANES AKELEYI Elliot.

Ammomanes phœnicuroides Reich. iii. p. 357 (1904).

Ammomanes akeleyi Lort Phillips, Ibis, 1898, p. 401.

a–c. ♂ ♀. Dubar, 31st May–2nd June, 1905.

d–g. ♂ ♀. Waghar, 15th Aug.–28th Aug., 1905.

Upper mandible pale slate-coloured; lower mandible pale horn-coloured, orange-brown at the base; legs and feet flesh- or pale horn-coloured; toes brown.

Family MOTACILLIDÆ.

ANTHUS TRIVIALIS (Linn.).

Anthus trivialis Reich. iii. p. 311 (1904).

a–f. ♂ ♀. Waghar, 22nd Sept.–6th Oct., 1905.

ANTHUS SORDIDUS Rüpp.

Anthus leucophrys sordidus Reich. iii. p. 318 (1904).

Anthus sordidus Lort Phillips, Ibis, 1898, p. 402.

a. ♂. Ragar plateau, 23rd June, 1905.

b–c′. ♂ ♀ et ♂ ♀ imm. Waghar, 25th June–3rd Nov., 1905.

Immature birds of this species have the feathers of the upper parts black margined with sandy buff, very different from those of the adult, which are nearly uniform greyish-brown, margined with sandy buff. There can be no doubt that these dark-backed birds are the young of the present species, for *A. sordidus* is the only Pipit found in the island of Sokotra, and there are quite young birds in the British Museum Collection procured by Mr. Ogilvie-Grant, which shew these characters plainly.

ANTHUS RUFULUS Vieill.

Anthus rufulus cinnamomeus Rüpp., Reich. iii. p. 313 (1904).

a. ♂. Waghar, 27th June, 1905.

MOTACILLA BOARULA Linn.

Motacilla boarula Linn., Reich. iii. p. 302 (1904) [part].

Motacilla melanope Lort Phillips, Ibis, 1898, p. 401.

a. ♀. Waghar, 1st Nov., 1905.

Family NECTARINIIDÆ.

NECTARINIA METALLICA (Licht.).

Hedydipna metallica Lort Phillips, Ibis, 1898, p. 404; Reich. iii. p. 493 (1905).

a–c. ♂ ♀. Dubar, 11th May–31st May, 1905.

d. ♀. Waghar, 8th Nov., 1905.

e–g. ♂ et ♂ imm. Burao, 1st March, 1906.

Mr. Bury notes that on the 11th of May this Sunbird was "always to be seen in pairs, hunting for insects on the wild figs."

CINNYRIS HABESSINICUS (Hempr. & Ehrenb.).

Cinnyris habessinicus Lort Phillips, Ibis, 1898, p. 402.

a–t. ♂ ♀ et ♂ ♀ imm. Waghar, 2nd July–8th Nov., 1905.

u. ♂. Burao, 30th Jan., 1906.

This is a very complete series obtained between the months of July and November, and in January. All stages of plumage between the immature and the adult are represented.

CINNYRIS OSIRIS (Finsch).

Cinnyris mariquensis osiris Reich. iii. p. 480 (1905).

a–d. ♂ ♀. Waghar, 20th Sept.–8th Nov., 1905.

e–l. ♂ ♀ et ♂ imm. Burao, 19th Jan.–22nd March, 1906.

CINNYRIS ALBIVENTRIS (Strickl.).

Cinnyris albiventris Lort Phillips, Ibis, 1898, p. 403; Reich. iii. p. 471 (1905).

a–f. ♂ ♀ et ♂ ♀ imm. Waghar, 20th Oct.–9th Nov., 1905.

g–n. ♂. Burao, 15th Dec., 1905–22nd Jan., 1906.

CINNYRIS HUNTERI (Shelley).

Chalcomitra hunteri Reich. iii. p. 462 (1905).

a–n. ♂ ♀ et ♂ imm. et ♂ juv. Burao, 20th–22nd Jan., 1906.

ANTHOTHREPTES ORIENTALIS (Hartl.).

Anthothreptes orientalis Lort Phillips, Ibis, 1898, p. 404.

Anthreptes longuemarei (Less.), Reich. iii. p. 446 (1905).

a. ♂. Geloko, 20th June, 1905.

Family ZOSTEROPIDÆ.

ZOSTEROPS ABYSSINICA Guér.

Zosterops abyssinica Reich. iii. p. 435 (1905).

a–h. ♂ ♀. Waghar, 6th June–20th Sept., 1905.

Family PARIDÆ.

PARUS THRUPPI Shelley.

Parus thruppi Shelley, Ibis, 1889, p. 406, pl. xi. fig. 2; Lort Phillips, Ibis, 1898, p. 404; Reich. iii. p. 517 (1905).

a–k. ♂ ♀. Waghar, 2nd July–18th Oct., 1905.

l–r. ♂ ♀. Burao, 15th Dec. 1905–1st Feb., 1906.

Bill black; legs and feet pale slate-coloured.

Family LANIIDÆ.

TELEPHONUS JAMESI Shelley.

Telephonus jamesi Shelley, Ibis, 1885, p. 403, pl. x. fig. 2; Lort Phillips, Ibis, 1898, p. 405.

Pomatorhynchus jamesi Reich. ii. p. 551 (1903).

a–e. ♂ ♀. Waghar, 25th July–13th Oct., 1905.

DRYOSCOPUS FUNEBRIS (Hartl.).

Dryoscopus funebris Lort Phillips, Ibis, 1898, p. 406.

Laniarius funebris Reich. ii. p. 574 (1903).

a. ♀. Dubar, 28th May, 1905.

b–o. ♂ ♀. Waghar, 29th June–30th Nov., 1905.

p–s. ♂ ♀. Burao, 23rd Feb.–29th Dec., 1906.

Iris pale blue; bill black; legs black; feet black, washed with grey.

[Found in dense bush; it has a curious metallic gong-like note.—*G. W. B.*]

DRYOSCOPUS ÆTHIOPICUS (Gmel.).

Dryoscopus æthiopicus Lort Phillips, Ibis, 1898, p. 405.

Laniarius æthiopicus Reich. ii. p. 577 (1903).

a–l. ♂ ♀ et ♂ ♀ imm. Waghar, 27th June–30th Aug., 1905.

Bill black, slate-coloured at the base of the lower mandibles in the male; legs and feet pale slate-coloured.

LANIARIUS CRUENTUS (Hempr. & Ehrenb.).

Pelicinius cruentus Reich. ii. p. 570 (1903).

a–c. ♂ ♀ et ♀ juv. Dubar, 21st May–5th June, 1905.

d–g. ♂ ♀ et ♂ ♀ imm. Waghar, 3rd Aug.–4th Sept., 1905.

h–w. ♂ ♀. Burao, 11th Nov., 1905–22nd March, 1906.

Mr. Bury obtained a very fine series of this Crimson-breasted Bush-Shrike.

LANIARIUS APPROXIMANS Cab.

Laniarius approximans Grant, Ibis, 1908, p. 287.

Malaconotus olivaceus hypopyrrhus Reich. ii. p. 602 (1903).

a. ♀. Waghar, 30th Aug., 1905.

Iris pale yellow; bill dark slate-coloured (almost black); legs and feet pale slate-coloured; toes dark slate-coloured.

This individual is an example of the race which Prof. Neumann has separated from the East-African form (*L. approximans*) under the name of *Malaconotus poliocephalus schoanus*. The difference is purely a matter of size, the wing of the present specimen measuring 4·7 inches, whereas in the wing of a typical Abyssinian bird it measures 4·2–4·3 inches.

LANIARIUS RUFICEPS (Shelley).

Dryoscopus ruficeps Shelley, Ibis, 1885, p. 402, pl. x. fig. 1.

Laniarius ruficeps Reich. ii. p. 585 (1903).

a–f. ♂ ♀. Burao, 15th–26th Feb., 1906.

NILAUS MINOR Sharpe.

Nilaus minor Sharpe, P. Z. S. 1895, p. 479; Lort Phillips, Ibis, 1898, p. 406; Grant & Reid, Ibis, 1901, p. 641.

Nilaus afer minor Reich. ii. p. 540 (1903).

a. ♂. Ragar, 22nd June, 1905.

b–i. ♂ ♀ et ♂ imm. Waghar, 23rd July–4th Sept., 1905.

k–r. ♂ ♀. Burao, 20th Jan.–17th March, 1906.

Iris very dark brown; bill blue-black, base of lower mandible slate-coloured; legs and feet pale slate-coloured; nails black.

The female of *Nilaus minor* does not seem to have been described. There is only one example marked as a female in the British Museum Collection, namely one from the Athi River, collected by Lord Delamere. Mr. Bury, however, obtained several at Waghar and Burao.

I have compared these with the hen of *N. capensis* Shaw, and beyond the difference in size, which, however, is most conspicuous, I can find no other distinguishing feature.

The following is a comparative list of the wing measurements of both birds:--

	in.
Nilaus capensis from Damaraland	3·5
Nilaus minor from the Athi River	3·1
,, ,, ,, Burao	2·85–2·9
,, ,, ,, Waghar	2·9

LANIUS COLLURIO Linn.

Lanius collurio Grant, Nov. Zool. ix. p. 471 (1902); Reich. ii. p. 622 (1903).

a. ♂. Dubar, 11th May, 1905.

b–e. ♂ ♀ et ♂ imm. Waghar, 26th Sept.–31st Oct., 1905.

LANIUS ISABELLINUS Hempr. & Ehrenb.

Lanius isabellinus Grant, Nov. Zool. ix. p. 482 (1902); Reich. ii. p. 624 (1903).

a–i. ♂ ♀. Waghar, 21st Sept.–26th Oct., 1905.

LANIUS PALLIDIROSTRIS Cass.

Lanius pallidirostris Grant, Nov. Zool. ix. p. 459 (1902); Reich. ii. p. 620 (1903).

a. ♂. Dubar, 3rd June, 1905.

LANIUS ANTINORII Salvad.

Lanius antinorii Lort Phillips, Ibis, 1898, p. 405; Grant, Nov. Zool. ix. p. 463 (1902); Reich. ii. p. 614 (1903).

a–f. ♂ ♀ et ♂ imm. Dubar, 28th March–13th June, 1905.

g–w. ♂ ♀ et ♂ ♀ imm. Waghar, 26th June–30th Oct., 1905.

x–q′. ♂ ♀. Burao, 15th Dec., 1905–22nd Jan., 1906.

The adult birds among the large series of specimens collected by Mr. Bury shew little or no variation in the markings of the wing- and tail-feathers.

Family PRIONOPIDÆ.

PRIONOPS CRISTATUS Rüpp.

Prionops cristata Reich. ii. p. 530 (1903).

a–f. ♂ ♀ et ♂ imm. Burao, 17th Feb.–March, 1906.

Iris and orbital patch bright yellow; bill jet-black; legs and feet coral-red; toes slate-coloured.

EUROCEPHALUS RUEPPELLI Bonap.

Eurocephalus rueppelli Lort Phillips, Ibis, 1898, p. 406.

Eurocephalus rüppelli Reich. ii. p. 526 (1903).

a. ♂ imm. Libah Rajaz, 21st June, 1905.

b–e. ♂ ♀ et ♀ imm. Waghar, 7th Aug.–8th Nov., 1905.

f–i. ♂ ♀. Burao, 6th Jan.–21st Feb., 1906.

Family SYLVIIDÆ.

ACROCEPHALUS PHRAGMITIS (Bechst.).

Acrocephalus schœnobænus (Linn.); Reich. iii. p. 588 (1905).

a. ♀. Dubar, 23rd June, 1905.

Iris brown; upper mandible black, lower mandible horn-coloured; legs and feet pale horn-coloured.

ACROCEPHALUS TURDOIDES (Meyer).

Acrocephalus arundinaceus (Linn.); Reich. iii. p. 585 (1905).

a. ♀. Dubar, 11th May, 1905.

Iris pale grey; bill and legs bluish horn-coloured; feet pale slate-coloured.

DAULIAS GOLZI (Cab.).

Ædon golzi Reich. iii. p. 787 (1905).

a. ♂. Waghar, 23rd Oct., 1905.

SYLVIA ATRICAPILLA (Linn.).

Sylvia atricapilla Reich. iii. p. 650 (1905).

a. ♀. Waghar, 18th Nov., 1905.

Bill very dark brown; legs and feet pearl-grey.

SYLVIA CINEREA Bechst.

Sylvia cinerea Lort Philiips, Ibis, 1898, p. 407.

Sylvia sylvia (Linn.), Reich. iii. p. 650 (1905).

a–k. ♂ ♀ imm. Waghar, 22nd Sept.–28th Oct., 1905.

HYPOLAIS LANGUIDA (Hempr. & Ehrenb.).

Hypolais languida Lort Phillips, Ibis, 1898, p. 408.

Hippolais languida Reich. iii. p. 646 (1905).

a–f. ♂ ♀. Waghar, 15th Aug.–20th Sept., 1905.

Upper mandible purplish-brown, lower mandible horn-coloured; legs and feet greyish-brown; toes brown.

CALAMONASTES SIMPLEX (Cab.).

Calamonastes simplex Lort Phillips, Ibis, 1898, p. 410; Reich. iii. p. 573 (1905).

a. ♀. Waghar, 27th Aug., 1905.

b. ♂. Burao, 21st Feb., 1906.

PARISOMA BLANFORDI (Seeb.)

Parisoma blanfordi Reich. iii. p. 522 (1905).

a–c. ♂ et ♂ imm. Dubar, 31st May – 6th June, 1905.

d–f. ♂ ♀ et ♂ imm. Waghar, 6th July – 28th Aug., 1905.

A good series of this rare Warbler was procured by Mr. Bury.

PARISOMA BOEHMI Reichenow.

Parisoma böhmi Reich. iii. p. 520 (1905).

a–k. ♂ ♀. Burao, 7th–22nd Jan., 1906.

SYLVIELLA MICRURA (Rüpp.).

Sylviella micrura Grant, Ibis, 1900, p. 154 & 1907 p. 593; Lort Phillips, Ibis, 1898, p. 409.

Sylvietta leucopsis Reich. iii. p. 629 (1905).

a. ♂ imm. Dubar, 7th June, 1905.

b–e. ♂ ♀ et ♂ imm. Waghar, 28th July–17th Oct., 1905.

Iris brown; bill dark brown, tinged with purple; legs and feet flesh-coloured.

SYLVIELLA GAIKWARI Sharpe.

Sylviella gaikwari Sharpe, Bull. B. O. C. xi. p. 47 (1901); id. P. Z. S. 1901, p. 306; Bannerman, Bull. B. O. C. xxv. p. 21 (1909).

Sylvietta gaikwari Reich. iii. p. 630 (1905).

a. ♀ ad. Burao, 22nd Jan., 1906.

The type-specimen, an adult male in the British Museum Collection, obtained by Dr. Donaldson Smith at Ania, in Northern Somaliland, was hitherto the only example known. An adult female of this rare species was obtained by Mr. G. W. Bury further east, at Burao, and I have thought it of sufficient importance to describe it. This skin is in fine condition, the feathers being freshly moulted and considerably lighter in colour than in the type-specimen, the wing of which measures 2·5 inches.

Adult female. Head, entire upper parts, and tail grey, slightly tinged with olive; sides of the face and lores light buff; eyebrows white; throat white; under parts whitish, washed with buff on the flanks, becoming darker on the thighs; under wing-coverts white tinged with buff; wing 2·25 inches.

DRYODROMAS SMITHI Sharpe.

Dryodromas smithi Sharpe, Bull. B. O. C. iv. p. xxix (1895); Lort Phillips, Ibis, 1898, p. 409.

Apalis rufifrons (Rüpp.), Reich. iii. p. 600 (1905).

a. ♂. Dubar, 4th June, 1905.

b–i. ♂ ♀ et ♀ imm. Waghar, 25th July – 20th Oct., 1905.

k–m. ♂ ♀. Burao, 22nd Jan.–1st March, 1906.

Male. Iris pale brown, upper mandible brownish-purple, paler at the base, lower mandible similar but paler; legs and feet pale brown; toes dark brown.

The series procured by Mr. Bury belongs to the southern form which has been separated from *D. rufifrons* by Dr. Sharpe (P. Z. S. 1895, p. 482). They have the outer web of the outer tail-feathers white; but very few have white edgings to the wing-coverts and inner secondaries, the immature birds shewing no trace of it; no doubt the white edges soon become worn. In the three examples from Burao the chestnut on the head is very bright, and extends onto the nape.

APALIS VIRIDICEPS Hawker.

Apalis viridiceps Hawker, Ibis, 1899, p. 71, pl. ii. fig. 1; Reich. iii. p. 612 (1905).

a–e. ♂ ♀. Burao, 3rd Jan.–1st March, 1906.

EREMOMELA FLAVOCRISSALIS Sharpe.

Eremomela flavicrissalis Reich. iii. p. 636 (1905); Lort Phillips, Ibis, 1898, p. 409.

a–d. ♂ ♀. Waghar, 14th Aug.–18th Oct., 1905.

e–k. ♂ ♀. Burao, 5th–20th Jan., 1906.

CAMAROPTERA CHRYSOCNEMIS Licht.

Camaroptera chrysocnemis Grant & Reid, Ibis, 1901, p. 648.

Camaroptera griseoviridis (v. Müll.), Reich. iii. p. 616 (1905).

Camaroptera brevicaudata Cretzschm., Lort Phillips, Ibis, 1898, p. 409.

a–e. ♂. Waghar, 22nd July–18th Nov., 1905.

Bill dark brown; legs and feet brownish flesh-coloured.

This species has very properly been separated from *C. brevicaudata*, the under parts being very much greyer than in that species and only becoming white on the middle of the belly.

Family TURDIDÆ.

TURDUS LUDOVICIÆ Lort Phillips.

Merula ludoviciæ Lort Phillips, Ibis, 1898, p. 410.

Turdus ludoviciæ Reich. iii. p. 685 (1905).

a–g. ♂ ♀ et ♂ ♀ imm. Waghar, 10th July–4th Oct., 1905.

MONTICOLA RUFOCINEREUS (Rüpp.).

Monticola rufocinereus Lort Phillips, Ibis, 1898, p. 411; Reich. iii. p. 697 (1905).

a–n. ♂ ♀. Waghar, 27th June–28th Aug., 26th Oct., 1905.

MONTICOLA CYANUS Linn.

Monticola cyanus Lort Phillips, Ibis, 1898, p. 411; Reich. iii. p. 700 (1905).

a. ♂. Waghar, 31st Oct., 1905.

MONTICOLA SAXATILIS Linn.

Monticola saxatilis Lort Phillips, Ibis, 1898, p. 410; Reich. iii. p. 699 (1905).

a–c. ♂ ♀. Waghar, 21st Sept.–1st Nov., 1905.

RUTICILLA RUFIVENTRIS (Vieill.).

Ruticilla rufiventris Reich. iii. p. 781 (1905).

a. ♂. Burao, 21st Feb., 1906.

b–f. ♂ ♀. Waghar, 20th Oct.–1st Nov., 1905.

Some of the males collected by Mr. Bury have the back much greyer than in Indian examples of *R. rufiventris*, and on turning up the feathers of the mantle we find no concealed black subterminal portion: some Somaliland birds, however, have black on the feathers of the mantle, and others are not to be separated from specimens from India. This difference does not appear to be seasonal.

ERYTHROPYGIA HAMERTONI Grant.

Erythropygia hamertoni Grant, Bull. B. O. C. xix. p. 24 (1906).

a. ♂ imm. Waghar, 12th Aug., 1905.

This rather remarkable form is fully described in the Bulletin of the B. O. C. cited above. The type specimen was procured by Captain A. E. Hamerton at Beira.

ERYTHROPYGIA LEUCOPTERA (Rüpp.).

Erythropygia leucoptera Reich. iii. p. 773 (1905); Lort Phillips, Ibis, 1898, p. 410.

a–p. ♂ ♀. Burao, 20th Jan.–21st March, 1906.

MYRMECOCICHLA LIPURA (Hempr. & Ehrenb.).

Cercomela lypura Reich. iii. p. 712 (1905).

a, b. ♂ ♀. Dubar, 12th May–5th June, 1905.

c–p. ♂ ♀. Waghar, 2nd July–27th Oct., 1905.

A bird shot on the 27th of October is in very peculiar plumage, the entire upper surface being grey and the tail light brown, the feathers being so worn that they appear to be barred with grey. The inner webs of the primaries are light buff, and the outer webs of the secondaries are barred like the tail. The entire under surface is white, washed with pinkish-buff. This worn state of the plumage gives the bird such a peculiar appearance that at first sight it might be mistaken for a distinct species.

SAXICOLA ŒNANTHE Linn.

Saxicola œnanthe Reich. iii. p. 723 (1905).

a–c. ♂ ♀ et ♀ imm. Waghar, 22nd Sept., 1905.

SAXICOLA ISABELLINA Cretzschm.

Saxicola isabellina Lort Phillips, Ibis, 1898, p. 412; Reich. iii. p. 721.

a–e. ♂ ♀. Waghar, 10th Oct.–3rd Nov., 1905.

SAXICOLA DESERTI Temm.

Saxicola deserti Lort Phillips, Ibis, 1898, p. 413; Reich. iii. p. 726 (1905).

a–f. ♂. Burao, 19th Jan.–22nd Feb., 1906.

SAXICOLA PLESCHANKA (Lepech.).

Saxicola leucomela Grant, Ibis, 1890, p. 165.

Saxicola morio Lort Phillips, Ibis, 1898, p. 413.

Saxicola pleschanka Grant, Nov. Zool. vii. p. 256 (1900).

a–t. ♂ ♀. Waghar, 10th Oct.–2nd Nov., 1905.

SAXICOLA VITTATA Hempr. & Ehrenb.

Saxicola vittata Grant & Reid, Ibis, 1901, p. 658; Reich. iii. p. 724 (1905).

Saxicola somalica Sharpe, P. Z. S. 1895, p. 486.

a, b. ♂ ♀ [♂]. Waghar, 24th Oct.–2nd Nov., 1905.

Two examples of this rare Chat in freshly-moulted winter-plumage.

SAXICOLA PHILLIPSI Shelley.

Saxicola phillipsi Lort Phillips, Ibis, 1898, p. 412; Reich. iii. p. 724 (1905).

a. ♂ imm. Ragar, 22nd June, 1905.

b–s. ♂ ♀ et ♂ ♀ imm. Waghar, 23rd June–4th Nov., 1905.

PRATINCOLA MAURA (Pall.).

Pratincola mœura Reich. iii. p. 734.

a, b. ♂ ♀. Waghar, 22nd Sept. 1905.

Family TIMELIIDÆ.

CRATEROPUS SMITHI Sharpe.

Crateropus smithi Reich. iii. p. 664 (1905).

a–p. ♂ ♀ et ♂ ♀ imm. Waghar, 10th July–1st Nov., 1905.

Iris bright red or chestnut-brown; bill blue-black; legs pale slate-coloured; legs and feet black.

ARGYA AYLMERI Shelley.

Argya aylmeri Shelley, Ibis, 1885, p. 404, pl. xi. fig. 1; Reich. iii. p. 673 (1905).

a–f. ♂ ♀ et ♂ imm. Burao, 1st Feb.–20th March, 1906.

This species was first described and figured from examples procured by Mr. Lort Phillips in North Somaliland.

Family PYCNONOTIDÆ.

PYCNONOTUS ARSINOË (Hempr. & Ehrenb.).

Pycnonotus arsinoë Lort Phillips, Ibis, 1898, p. 413.

Pycnonotus arsinoë somaliensis Reich. iii. p. 840 (1905).

a, b. ♂ ♀. Ragar, 22nd–23rd June, 1905.

c. ♀. Dubar, 23rd May, 1905.

d–l. ♂ ♀ et ♂ juv. Waghar, 2nd July–23rd Oct., 1905.

m–r. ♂ ♀. Burao, 29th Dec., 1905, 2nd Jan.–23rd Feb., 1906.

Bill jet-black; legs and feet black.

Family MUSCICAPIDÆ.

MUSCICAPA GRISOLA Linn.

Muscicapa grisola Reich. ii. p. 449 (1903).

a–g. ♂ ♀. Waghar, 6th Sept.–26th Oct., 1905.

MUSCICAPA ATRICAPILLA Linn.

Muscicapa atricapilla Reich. ii. p. 451 (1903).

a–b. ♂ ♀. Waghar, 16th Aug.–1st Sept., 1905.

The occurrence of this species in Somaliland is not noted by Dr. Sharpe (P. Z. S. 1895), Mr. Lort Phillips (Ibis, 1896 and 1898), or by Mr. Ogilvie-Grant (Ibis, 1900).

MUSCICAPA SOMALIENSIS Bannerman.

Muscicapa somaliensis Bannerman, Bull. B. O. C. vol. xxv. p. 20 (1909).

a–m. ♂ ♀ et ♀ imm. Waghar, 22nd June–1st Sept., 1905. (*Including the types of the species.*)

This Flycatcher is very closely allied to *M. grisola*, L., but differs from that species in the following points :—The entire upper parts are brown, the forehead and crown being uniform and similar in colour to the back, not streaked with dark brown as in *M. grisola* ; the lores and feathers in front of the eye white ; the cheeks uniform pale brown ; the throat white ; the chest indistinctly streaked with brown (not boldly striated as in *M. grisola*) ; and the rest of the under surface white. Iris dark brown ; upper mandible purplish-brown, lower mandible pale purple ; legs, feet, and toes greyish-brown.

Total length (average measurement of 12 specimens) 5 inches ; bill (from the base of the skull to the tip) 0·6 ; wing 2·9 ; tail 2·5 ; tarsus 0·68.

Muscicapa grisola.			*Muscicapa somaliensis.*		
Total length....	5·4	inches.	Total length....	5	inches.
Culmen........	0·55	,,	Culmen........	0·6	,,
Wing	3·4	,,	Wing	2·9	,,
Tail	2·45	,,	Tail	2·5	,,
Tarsus	0·6	,,	Tarsus	0·68	,,

In all other respects the skins which I have examined are similar to *M. grisola*, but the characters mentioned above appear to be sufficient to separate them from that species.

CRYPTOLOPHA UMBRIVIRENS (Rüpp.).

Cryptolopha umbrovirens Reich. ii. p. 463 (1903).

a, b. ♂. Waghar, 15th July–1st Nov., 1905.

Upper mandible dark purplish brown (almost black), lower mandible pale horn-coloured ; legs and feet dark brown with a slight greyish tint.

BATIS ORIENTALIS (Heugl.).

Batis orientalis Reich. ii. p. 481 (1903).

a–m. ♂ ♀. Waghar, 23rd June–18th Oct., 1905.

n–q. ♂. Burao, 3rd Jan.–17th Feb., 1906.

Iris bright yellow ; bill black ; legs and feet black.

[In one bird which was dissected the stomach was found to contain a large number of ants.—*G. W. B.*]

TERPSIPHONE CRISTATA (Gmel.).
Terpsiphone cristata Lort Phillips, Ibis, 1898, p. 414.
Tchitrea viridis (Müll.), Reich. ii. p. 504 (1903).
a–i. ♂ ♀ et ♂ imm. Waghar, 28th June–11th Aug., 1905.

BRADYORNIS PUMILUS Sharpe.
Bradyornis pumilus Lort Phillips, Ibis, 1898, p. 406.
Bradornis griseus Reich. ii. p. 438 (1903).
a. ♂. Geloko, 20th June, 1905.
b–l. ♂ ♀. Waghar, 6th July–9th Nov., 1905.
m–x. ♂ ♀. Burao, 13th Dec.–19th Jan., 1906.

In this series there seems to be a great diversity in the size of the bill. In a specimen shot 6th July, 1905, the bill measures only 0·45 inch, as compared with 0·6 in most of the other examples.

Family HIRUNDINIDÆ.

COTILE OBSOLETA (Cab.).
Cotile obsoleta Lort Phillips, Ibis, 1898, p. 414.
Riparia obsoleta Reich. ii. p. 398 (1905).
a. ♂. Waghar, 6th July, 1905.

HIRUNDO ÆTHIOPICA Blanf.
Hirundo æthiopica Reich. ii. p. 406 (1903).
a. ♂. Waghar, 29th Sept., 1905.
b, c. ♀. Burao, 8th & 10th Jan., 1906.

Family PICIDÆ.

CAMPOTHERA NUBICA (Gmel.).
Campothera nubica Lort Phillips, Ibis, 1898, p. 415.
Dendromus nubicus Reich. ii. p. 178 (1902).
a. ♂. Dubar, 4th June, 1905.
b–h. ♂. Waghar, 15th July–24th Oct., 1905.
i–t. ♂ ♀ et ♂ imm. Burao, 5th Jan.–10th June, 1906.

Iris mauve (pinkish); bill rusty black; legs and feet sage-green washed with white.

Dendropicus hemprichi (Hempr. & Ehrenb.).
Dendropicos hemprichi Reich. ii. p. 197 (1902).
Dendromus hemprichi Lort Phillips, Ibis, 1898, p. 414.
a–h. ♂ ♀. Waghar, 26th June–14th Oct., 1905.
i–t. ♂ ♀. Burao, 9th Jan.–30th June, 1906.

[A pair were shot tapping about on a giant Cactus.—*G. W. B.*]

Thripias schoensis (Rüpp.).
Mesopicus schoensis Reich. ii. p. 191 (1902).
a–l. ♂ ♀. Burao, 7th Jan.–17th March, 1906.

Family INDICATORIDÆ.

Indicator major Steph.
Indicator major Reich. ii. p. 106 (1902).
a, b. ♂ ♀. Waghar, 30th June–10th Aug., 1905.

Bill dark brown with a slight purplish tinge, lower mandible lighter; legs and feet black washed with white.

Indicator minor Steph.
Indicator minor Reich. ii. p. 110 (1902).
a. ♀. Waghar, 10th Aug., 1905.

Bill dark slate-coloured (nearly black); legs and feet slate-coloured.

Family CAPITONIDÆ.

Trachyphonus margaritatus (Cretzschm.).
Trachyphonus margaritatus Reich. ii. p. 156 (1902); Lort Phillips, Ibis, 1898, p. 415.
a–c. ♂ ♀ et ♂ imm. Dubar, 11th–18th May, 1905.
d. ♀ imm. Ragar plateau, 23rd June, 1905.
e–l. ♂ ♀ et ♂ imm. Waghar, 23rd July–6th Sept., 1905.

[A most vociferous bird.—*G. W. B.*]

Trachyphonus shelleyi Hartl.
Trachyphonus shelleyi Hartl. Ibis, 1886, pp. 105, 111, pl. v.

Trachyphonus erythrocephalus Reich. ii. p. 155 (1902) [part].

a–o. ♂ ♀. Burao, 14th Jan.–22nd March, 1906.

Dr. Reichenow has united *T. shelleyi* with *T. erythrocephalus* Cab., but the two are really very distinct species. *T. shelleyi* is considerably smaller than *T. erythrocephalus*, the wing of the former measuring 3–3·2 inches and of the latter 3·9 inches. Moreover, *T. shelleyi* has much less crimson on the cheeks and eyebrows as well as on the throat; whereas *T. erythrocephalus* has the cheeks, eyebrows, and crown almost entirely crimson, the bill much heavier and of a much deeper red. *T. versicolor* Hartl., another allied form, differs from both the above-named species in having the under tail-coverts yellow, and from *T. shelleyi* in being much larger.

TRICHOLÆMA BLANDI Lort Phillips.

Tricholæma blandi Lort Phillips, Ibis, 1898, p. 415, pl. ix. fig. 1; Reich. ii. p. 134 (1902).

a–c. ♂ ♀. Waghar, 10th–23rd Oct., 1905.

Family CUCULIDÆ.

COCCYSTES JACOBINUS (Bodd.).

Coccystes jacobinus Reich. ii. p. 78 (1902).

a. ♂. Dubar, 14th June, 1905.

b. ♂. Waghar, 4th Nov., 1905.

COCCYSTES GLANDARIUS (Linn.).

Coccystes glandarius Reich. ii. p. 81 (1902).

a. ♂. Burao. 17th March, 1906.

CUCULUS CANORUS Linn.

Cuculus canorus Reich. ii. p. 89 (1902).

a. ♂ imm. Waghar, 18th Sept., 1905.

CENTROPUS SUPERCILIOSUS (Hempr. & Ehrenb.).

Centropus superciliosus Reich. ii. p. 65 (1902).

a. ♂. Waghar, 4th Oct., 1905.

Family MUSOPHAGIDÆ.

SCHIZORHIS LEUCOGASTER (Rüpp.).

Chizaerhis leucogastra Reich. ii. p. 33 (1902).

Schizorhis leucogaster Lort Phillips, Ibis, 1898, p. 416.

a–f. ♂ ♀. Waghar, 24th June–23rd Aug. and 21st–26th Oct., 1905.

g–i. ♂ ♀. Burao, 5th Jan., 1905–13th Jan., 1906.

Family COLIIDÆ.

COLIUS MACRURUS (Linn.).

Colius macrourus Reich. ii. p. 210 (1902).

Colius macrurus Sclater in Wytsman's Gen. Av., Picariæ, pt. vi. Coliidæ, p. 4 (1906).

a. ♂. Geloko, 20th June, 1905.

b, c. ♀. Waghar, 18th July, 1905.

d–l. ♂ ♀. Burao, 22nd Feb.–17th March, 1906.

Family CYPSELIDÆ.

CYPSELUS AFFINIS (J. E. Gray).

Apus affinis Reich. ii. p. 382 (1902).

a. ♂. Dubar, 7th June, 1905.

Family CAPRIMULGIDÆ.

CAPRIMULGUS INORNATUS Heugl.

Caprimulgus inornatus Lort Phillips, Ibis, 1898, p. 418; Reich. ii. p. 360 (1902).

a, b. ♂ ♀. Dubar, 10th May & June, 1905.

c–e. ♂ ♀. Waghar, 24th June–18th July, 1905.

Bill fleshy pink, black at the tip; interior of the gape dark flesh-coloured; legs and feet sienna-brown washed with white; nails dark brown.

Family MEROPIDÆ.

MELITTOPHAGUS RÉVOILII (Oust.).

Melittophagus révoili Reich. ii. p. 303 (1902).

a–e. ♂ ♀. Burao, 5th Jan.–22nd Feb., 1906.

MELITTOPHAGUS SHARPII Hartert.

Melittophagus cyanostictus (Cab.), Lort Phillips, Ibis, 1898, p. 418 ; Reich. ii. p. 308 (1902) [part].

Melittophagus sharpei Grant & Reid, Ibis, 1901, p. 672.

a–f. ♂ ♀. Waghar, 4th Oct.–4th Nov., 1905.

MEROPS ALBICOLLIS (Vieill.).

Aerops albicollis Reich. ii. p. 317 (1902).

a–c. ♂ ♀ et ♂ imm. Dubar, 10th–19th May, 1905.

Family UPUPIDÆ.

UPUPA SOMALIENSIS Salvin.

Upupa somalensis Reich. ii. p. 335 (1902).

Upupa somaliensis Lort Phillips, Ibis, 1898, p. 417.

a, b. ♂. Waghar, 1st–30th July, 1905.

c–e. ♂. Burao, 5th Jan.–23rd Feb., 1906.

On July 30th, 1905, Mr. Bury found numbers of Hoopoes in the Waghar Mountains ; no doubt they belonged to the present species and to *U. intermedia.*

UPUPA INTERMEDIA Grant & Reid.

Upupa intermedia Grant & Reid, Ibis, 1901, p. 674.

a–c. ♂ ♀. Waghar, 26th July–2nd Sept., 1905.

d. ♂. Burao, 7th Jan., 1906.

These four examples, obtained by Mr. Bury, confirm Mr. Ogilvie-Grant's opinion that this is a distinct species intermediate between *U. somaliensis* Salvin and *U. indica* Reichenb. (*cf.* Ibis, 1901, p. 674).

IRRISOR SOMALIENSIS Grant.

Irrisor erythrorhynchus (Lath.), Lort Phillips, Ibis, 1898, p. 417.

Irrisor senegalensis somaliensis Reich. ii. p. 342 (1902).

a–g. ♂ ♀. Burao, 26th Feb.–20th March, 1906.

h–n. ♂ ♀ et ♂ imm. Waghar, 7th July–21st Oct., 1905.

Bill black ; legs and feet coral-red washed with white ; toes black.

The two most adult male birds in the series (with the bill measuring about 2·5 inches) have the basal part of the lower mandible more or less scarlet. It has been suggested by Mr. Ogilvie-Grant, in speaking of the allied black-billed species *I. melanorhynchus* (*cf.* Ibis, 1905, p. 210), that the partly red bill may be a characteristic of the female sex, but in the present instance both birds are said to be males. It must be added, however, that no reliance can be placed on Mr. Bury's determinations.

RHINOPOMASTUS MINOR (Rüpp.).

Rhinopomastus minor Reich. ii. p. 347 (1902); Lort Phillips, Ibis, 1898, p. 417.

a–l. ♂ ♀ et ♀ imm. Burao, 7th Jan.–22nd March, 1906.

m–y. ♂ ♀. Waghar, 23rd July–30th Oct., 1905.

Bill vermilion or reddish-orange; legs and feet slate-black.

The length of the bill varies greatly with age, likewise the width of the white wing-bar, the oldest birds having the narrowest mirror. The brown ends of the primaries denote the adult female and young, the adult males having the primaries greenish-black to the tip.

Family BUCEROTIDÆ.

LOPHOCEROS HEMPRICHI Ehrenb.

Lophoceros hemprichi Reich. ii. p. 253 (1902).

a–h. ♂ ♀ et ♀ imm. Waghar, 14th July–31st Aug., 18th Sept. and 6th Nov., 1905.

Iris dark brown; bill dull red with an orange tinge at the base; legs and feet black.

In the immature female the bill is black with the tip of the lower mandible yellow; legs dark slate-coloured.

In the adult female Mr. Bury notes that the throat-patch is sulphur-coloured and scantily feathered, and that the base of the upper mandible is yellow.

LOPHOCEROS ERYTHRORHYNCHUS (Temm.).

Lophoceros erythrorhynchus Reich. ii. p. 262 (1902).

Lophoceros medianus Sharpe, Lort Phillips, Ibis, 1898, p. 417.

a. ♂. Geloko, 20th June, 1905.
b, c. ♂ ♀. Waghar, 26th Aug., 1905.
d. ♀. Burao, 29th Jan., 1906.

Bill dark red, black near the base of the lower mandible; legs and feet black washed with white; throat-patch livid flesh-coloured.

LOPHOCEROS FLAVIROSTRIS (Rüpp.).

Lophoceros flavirostris Lort Phillips, Ibis, 1908, p. 417; Reich. ii. p. 261 (1902).

a–g. ♂ ♀ et ♂ ♀ imm. Waghar, 29th June–10th Aug., and 31st Oct., 1905.

h. ♂. Burao, 22nd March, 1906.

Family TROGONIDÆ.

HAPALODERMA NARINA (Steph.).

Apaloderma narina Reich. ii. p. 212 (1902).

a–d. ♂ ♀ et ♂ imm. Waghar, 28th July–30th Aug., 1905.

Iris dark brown; bill yellowish-grey, canary-coloured at the gape, the upper mandible of the male being darker than that of the female; interior of the gape and palate flesh-coloured; orbital patch azure tinged with mauve close to the eye; legs and feet vandyke or pinkish-brown washed with white.

Family CORACIIDÆ.

CORACIAS GARRULUS Linn.

Coracias garrulus Reich. ii. p. 217 (1902).

a. ♂. Waghar, 23rd Aug., 1905.

CORACIAS LORTI Shell.

Coracias lorti Lort Phillips, Ibis, 1898, p. 416; Reich. ii. p. 225 (1902).

a–d. ♂ ♀ et ♀ imm. Waghar, 17th July – 29th Aug., 1905.

e–i. ♂ ♀. Burao, 15th Feb.–19th March, 1906.

CORACIAS NÆVIUS Daud.

Coracias nævius Lort Phillips, Ibis, 1898, p. 416; Reich. ii. p. 225 (1902).

a–i. ♂ ♀ et ♂ ♀ imm. Waghar, 4th July–6th Sept., 1905.

Family PSITTACIDÆ.

PŒOCEPHALUS RUFIVENTRIS (Rüpp.).

Poicephalus rufiventris Reich. ii. p. 15 (1902).

a–c. ♂ ♀. Waghar, 4th July–2nd Sept., 1905.

d–p. ♂ ♀ et ♀ imm. Burao, 1st Jan.–21st March, 1906.

Family BUBONIDÆ.

CARINE SPILOGASTRA (Heugl.).

Carine spilogastra Lort Phillips, Ibis, 1898, p. 418.

Athene spilogaster Reich. i. p. 671 (1901).

a–d. ♂ ♀. Burao, 11th Dec., 1905–6th Jan., 1906.

e, f. ♂ ♀. Waghar, 2nd Nov., 1905.

SCOPS LEUCOTIS (Temm.).

Asio leucotis Lort Phillips, Ibis, 1898, p. 418; Reich. i. p. 661 (1901).

a. ♀. Burao, 24th Feb., 1906.

Iris orange; bill greenish-grey, paler at the tip; feet horn-coloured, nails dark horn-coloured.

Family FALCONIDÆ.

ASTUR SPHENURUS (Rüpp.).

Astur sphenurus Reich. i. p. 557 (1901).

a–d. ♂ ♀ et ♂ ♀ imm. Waghar, 14th July–23rd Sept., 1905.

e–g. ♂. Burao, 24th Feb.–21st March, 1906.

Iris flame-coloured; bill dark slate-coloured; cere orange; legs and feet orange; nails blue-black.

MELIERAX POLYZONUS (Rüpp.).

Melierax metabates (Heugl.), Reich. i. p. 544 (1901).

a. ♀ imm. Geloko, 6th Dec., 1905.

b. ♂. Burao, 24th Feb., 1906.

c. ♂. Waghar, 10th–30th Oct., 1905.

Iris raw sienna; bill dark slate-coloured; cere canary-yellow; legs and feet reddish-orange, nails blue-black.

Melierax gabar (Daud.).

Micronisus gabar Reich. i. p. 565 (1901).

a–e. ♂ ♀ et ♂ ♀ imm. Burao, 9th Jan.–21st March, 1906.

Iris tawny-brown; cere pink or orange; bill slate-coloured; legs and feet orange.

Melierax niger (Vieill.).

Melierax niger Lort Phillips, Ibis, 1898, p. 419; Butler, Ibis, 1908, p. 419.

Micronisus niger Reich. i. p. 567 (1901).

a. ♀. Waghar, 29th Nov., 1905.

Iris brown; bill orange at the base, slate-coloured at the tip; legs and feet vermilion, toes blue-black.

Mr. Butler considers that this bird is merely a melanism of *M. gabar*.

Buteo augur Rüpp.

Buteo augur Reich. i. p. 592 (1901).

a. ♂. Waghar, 6th Oct., 1905.

Iris dark brown; bill dark slate-coloured, cere orange; legs and feet orange, toes bluish-black.

Milvus ægyptius Gmel.

Milvus ægyptius Lort Phillips, Ibis, 1898, p. 420; Reich. i. p. 609 (1901).

a–d. ♂ ♀. Waghar, 18th Sept.–6th Nov., 1905.

Falco tanypterus Schl.

Falco tanypterus Reich. i. p. 626 (1901).

a. ♂. Dubar, 4th June, 1905.

b. ♂. Burao, 21st March, 1906.

Iris brown; bill slate-coloured at the tip, shading to yellowish-white at the base; cere yellow; legs and feet yellow, nails blue-black.

Falco minor Bonap.

Falco minor Reich. i. p. 622 (1901).

a. ♂. Geloko, 6th Dec., 1905.

Bill pale slate-coloured; cere yellow; legs and feet bright yellow.

Poliohierax semitorquatus (A. Smith).

Poliohierax semitorquatus Lort Phillips, Ibis, 1898, p. 420; Reich. i. p. 645 (1901).

a. ♂. Geloko, 20th June, 1905.

b–d. ♀. Waghar, 24th Aug.–26th Oct., 1905.

e–a′. ♂ ♀. Burao, 3rd Jan.–21st Feb., 1906.

Iris brown; cere cerise; gape, nares, and orbital ring vermilion; bill slate-coloured, dark at the tip; legs and feet coral-red, nails blue-black.

These little Falcons appear to be plentiful in North Somaliland, judging from the large series which Mr. Bury has obtained.

Cerchneis tinnunculus (Linn.).

Cerchneis tinnunculus Lort Phillips, Ibis, 1898, p. 420; Reich. i. p. 641 (1901).

a–c. ♂ ♀ et ♂ imm. Waghar, 14th July–26th Aug., 1905.

d, e. ♂ et ♂ imm. Burao, 23rd Feb.–20th March, 1906.

Bill pale slate-coloured; cere dull yellow; legs and feet yellow washed with white; toes blue-black.

Cerchneis saturata Blyth.

Cerchneis saturata Sharpe, Hand-l. i. p. 277 (1899).

a–c. ♀ et ♂ imm. Waghar, 18th July–26th Aug., 1905.

Adult female. Bill slate-coloured; legs and feet orange; nails bluish black.

The above-mentioned specimens were all procured on the high ground at Waghar in company with examples of *C. tinnunculus.* They are very dark birds and agree perfectly with specimens from the Himalaya, Burma, &c.

Cerchneis fieldi Elliot.

Cerchneis fieldi Sharpe, Hand-l. i. p. 277 (1899).

a. ♂. Burao, 2nd March, 1906.

A fine adult male of this very distinct form, which belongs to the group of *C. rupicola,* and has the middle tail-feathers barred with black.

AQUILA ALBICANS Rüpp.

Aquila rapax (Temm.), Lort Phillips, Ibis, 1898, p. 419; Reich. i. p. 587 (1901).

Aquila albicans Sushkin, Bull. B. O. C. xi. p. 6 (1900).

a–d. ♂ ♀. Waghar, 8th–30th July and 2nd Nov., 1905.

e. ♂. Burao, 26th Jan., 1906.

The specimens collected by Mr. Bury form part of the material examined by Prof. Sushkin when preparing his monograph on this group of Eagles. The birds represent various interesting stages of plumage, and are a valuable addition to the British Museum.

Family VULTURIDÆ.

LOPHOGYPS OCCIPITALIS (Burch.).

Lophogyps occipitalis Reich. i. p. 514 (1901).

a. ♂. Waghar, 29th Sept., 1905.

Iris brown; bill pale brick-red, tipped with dark slate-colour; cere pale slate-coloured; legs and feet pale pinkish-flesh-coloured; toes bluish-black.

Family OTIDIDÆ.

LOPHOTIS GINDIANA (Oust.).

Lophotis gindiana Lort Phillips, Ibis, 1898, p. 421.

Otis gindiana Reich. i. p. 253 (1900).

a. ♂. Burao, 7th Feb., 1906.

HETEROTETRAX HUMILIS (Blyth).

Otis humilis Reich. i. p. 251 (1900).

a. [♀]. Burao, 7th Feb., 1906.

This rare Bustard is a welcome addition to the British Museum, where the species was very poorly represented.

Family SCOPIDÆ.

SCOPUS UMBRETTA Gmel.
Scopus umbretta Reich. i. p. 353 (1901).
a. ♀. Waghar, 6th Nov., 1905.
Iris dark brown; bill, legs, and feet black.

Family ŒDICNEMIDÆ.

ŒDICNEMUS AFFINIS, Rüpp.
Œdicnemus affinis Lort Phillips, Ibis, 1898, p. 421.
Œdicnemus capensis Licht.; Reich. i. p. 198 (1900).
a. ♀. Burao, 24th Feb., 1906.

Family CURSORIIDÆ.

CURSORIUS SOMALENSIS Shell.
Cursorius gallicus somalensis Shelley, Ibis, 1885, p. 415.
Cursorius somaliensis Lort Phillips, Ibis, 1898, p. 422.
Cursorius somalensis Reich. i. p. 154 (1900).
a. ♀. Waghar, 30th Jan., 1906.
b–e. ♂ ♀. Burao, 9th Dec., 1905–22nd March, 1906.

RHINOPTILUS HARTINGI Sharpe.
Rhinoptilus hartingi Lort Phillips, Ibis, 1898, p. 421.
Rhinoptilus bisignatus hartingi Reich. i. p. 160 (1900).
a. ♀. Ragar plateau, 23rd June, 1905.

RHINOPTILUS CINCTUS (Heugl.).
Rhinoptilus cinctus Lort Phillips, Ibis, 1898, p. 421; Reich. i. p. 160 (1900).
a–f. ♂ ♀. Waghar, 5th Sept.–26th Oct., 1905.

Family CHARADRIIDÆ.

STEPHANIBYX CORONATUS (Bodd.).
Stephanibyx coronatus Reich. i. p. 180 (1900).
Stephanibyx coronata Lort Phillips, Ibis, 1898, p. 422.
a. ♂. Lebah Ragar, 21st June, 1905.
b. ♂. Ragar plateau, 23rd June, 1905.
c–e. ♂ ♀. Burao, 9th and 12th Jan., 1906.

TRINGOIDES HYPOLEUCUS (Linn.).

Tringoides hypoleucus Lort Phillips, Ibis, 1898, p. 423; Reich. i. p. 224 (1900).

a. ♀. Waghar, 10th Oct., 1905.

Family RALLIDÆ.

SAUROTHURA BURYI Grant.

Saurothura buryi Grant, Bull. B. O. C. xxi. p. 93 (1908).

a. ♀. Dubar, 30th May, 1905. (*Type of the species.*)

This little Rail most nearly resembles the female of *S. elegans* (Smith), but differs in having the middle of the breast and the belly conspicuously white, with somewhat faint transverse bars of dark brown. Total length ca. 6 inches; wing 3·55; tail 1·5; tarsus 1·1.

Mr. Bury mentions that this Rail was found along the irrigation channels: on learning that it was certainly a new species, he took special trouble to procure additional examples, but never met with it again.

Family COLUMBIDÆ.

VINAGO WAALIA (Gmel.).

Vinago waalia Lort Phillips, Ibis, 1898, p. 424; Reich. i. p. 392 (1901).

a. ♂. Waghar, 9th August, 1905.

TURTUR SEMITORQUATUS (Rüpp.).

Turtur semitorquatus Reich. i. p. 409 (1901).

a. ♂. Burao, 23rd March.

b–c. ♂ et ♀ imm. Waghar, 14th & 15th July, 1905.

Iris golden yellow; bill black; legs dark brown, washed with white.

TURTUR SENGALENSIS (Linn.).

Turtur senegalensis Reich. i. p. 406 (1901).

a. ♂. Dubar, 4th June, 1905.

TURTUR ROSEOGRISEUS (Sundev.).

Turtur roseogriseus Reich. i. p. 413 (1901).

a. ♂. Dubar, 3rd June, 1905.

Œna capensis (Linn.).

Œna capensis Reich. i. p. 429 (1901).

a. ♀. Waghar, 28th July, 1905.

Bill dark brown; legs and feet mauve; nails dark brown.

Chalcopelia chalcospilus Bonap.

Chalcopelia afra Lort Phillips, Ibis, 1898, p. 424; Reich. i. p. 426 (1901).

a–f. ♂ ♀ et ♀ imm. Waghar, 30th June–18th July, 1905.

Bill mauve, darker at the tip; legs and feet mauve; toes blue-black.

In one male and four female specimens procured by Mr. Bury the wing spots are golden green [= *C. chalcospilus* Bonap. *fide* Sharpe, Bull. B. O. C. xii. p. 83 (1902)]. In the sixth specimen, a male, the spots are partly purplish-blue and partly golden green, but this change of colour is obviously caused by exposure, for the purplish-blue portion of each spot is the portion which is visible when the wings are closed. *C. delicatula* Sharpe, from the While Nile, appears to be synonymous with *C. abyssinicus* Sharpe, the colour of the legs being much the same in both.

Family Pteroclidæ.

Pteroclurus exustus (Temm.).

Pteroclurus exustus Reich. i. p. 316 (1900).

a. ♂. Dubar, 4th June, 1905.

Family Phasianidæ.

Francolinus kirki Hartl.

Francolinus kirki Lort Phillips, Ibis, 1898, p. 425; Reich. i. p. 497 (1901).

a. ♂. Libah Rajaz, 21st June, 1905.

b–e. ♀ et ♀ imm. Waghar, 12th Aug.–25th Sept., 1905.

Pternistes infuscatus Cab.
Pternistes infuscatus Lort Phillips, Ibis, 1898, p. 425.
Pternistes leucoscepus infuscatus Reich. i. p. 455 (1901).
a. ♂. Waghar, 5th Sept., 1905.

Numida ptilorhyncha (Licht.).
Numida ptilorhyncha Reich. i. p. 445 (1901).
a. ♀. Waghar, 5th Aug., 1905.

XIII.—*Remarks on some recently described Species of* Calospiza*. By C. E. Hellmayr, M.B.O.U.

(Plate V.)

Since the publication of Volume xi. of the 'Catalogue of Birds in the British Museum' our knowledge of the brilliant Tanagrine genus *Calospiza* has considerably advanced. Twelve new forms have been added to the already long list of species, and a good deal of fresh information about the relations and geographical distribution of others has been supplied by various authors. In 'The Ibis' for 1901, pp. 595–7, Dr. Sclater has given a short account of *C. margaritæ* Allen, *C. johannæ* Dalm., and *C. emiliæ* Dalm., accompanied by coloured figures of the two latter species taken from specimens in the Tring Museum. *C. margaritæ* belongs to the group of *C. flava*, and replaces it in Matto Grosso (Chapada). Another race of the same section was made known by Count Berlepsch as *Calospiza formosa sincipitalis* ('Ornis,' xiv. Feb. 1907, p. 348). The type came from Leopoldina, a place on the Rio Araguaya, in the Brazilian State of Goyaz, whence the Tring Museum also received several examples through Mons. G. A. Baer. In my report on M. Baer's collections * I have discussed, at some length, the various geographical races of *C. flava*, viz.: *C. flava flava* (Gm.), Bahia to Pernambuco; *C. flava chloroptera* (Vieill.), São Paulo and Paraguay; *C. flava sincipitalis* Berl., Goyaz; *C. flava margaritæ* (Allen), Matto Grosso.

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* *Calospiza*, G. R. Gray, List of Genera of Birds, 1840, p. 44: type *C. tricolor* (Gm.). *Calliste* Boie, 1826, et auct. (nec *Callista* Poli, 1791); *cf.* Stone, Proc. Acad. Nat. Sci. Philad. 1895, pp. 251–2. [We do not agree with Mr. Stone's view (*op. cit.*) that the similarity of "*Calliste*" of Boie to "*Callista*" of Poli precludes the usage of the former name. If spelled correctly the terms are different, and moreover belong to different branches of zoology, so that there is no chance of confusion. If we use "*Picus*" and "*Pica*," why should we reject "*Calliste*" because it is so like "*Callista*"?—Edd.]

About the two Colombian species described by Comte de Dalmas I have to say a few words. Of *C. johannæ*, the Munich Museum has lately received an adult male, a female, and a young bird, from the Province of Chocó, Western Colombia. This striking species is evidently confined to the humid forests on the Pacific slopes of the Western Cordillera in Colombia and North-western Ecuador †. *C. emiliæ* Dalm., which inhabits the same district, I have shown to be the true *C. lavinia* of Cassin, and I have, accordingly, proposed the new name *C. lavinia dalmasi* for the Central American form ‡. A third race of this group has been separated as *C. lavinia cara* by Mr. O. Bangs in Proc. Biol. Soc. Wash. xviii. 1905, p. 155 (type from Ceiba, Honduras). It agrees with *C. l. dalmasi* in coloration, but is larger, with a much longer and more slender bill.

In 1901, Count Berlepsch described *Calliste sophiæ*, two specimens of which had been obtained by Mr. O. Garlepp at Songo in the Yungas of Western Bolivia (Journ. f. Ornith. 1901, p. 83). Shortly afterwards Mr. Jean Kalinowski forwarded a series from Marcapata, S.E. Peru, to the

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* Novit. Zool. xv. 1908, pp. 26–28.

† Dr. Sclater ('Ibis,' 1901, p. 597) recorded two specimens from Oroya and Rio Yinimbare, Peru, P. Simons coll. This, however, was due to some misunderstanding, for, as I am informed by Mr. C. Chubb, the British Museum does not possess specimens of *C. johannæ*, the two skins mentioned being referable to *Chlorochrysa fulgentissima* Chapm.

‡ Revue Franç. d'Orn. ii. no. 11, March 1910, p. 162.

Branicki Museum *. *C. sophiæ* is a near ally of *C. pulchra* Tsch., though easily distinguished by the different colour of the pileum, by having the chestnut of the throat somewhat duller, and extended on to the chest, &c.

In the same year, Mr. Ridgway separated the Veraguan form of *C. florida*, on account of its smaller size, more yellowish-green colour, and the absence of the yellow occipital patch in the male, under the name *C. florida arcæi* (Proc. Wash. Acad. Sci. iii. p. 149). Judging from a single specimen I consider it a fairly well-marked race.

The next year brought to light an interesting, though not strikingly distinct form of the "*C. flaviventris*" group. Up to that time we knew only three geographical races, to which Count Berlepsch and Mr. Hartert then added a fourth, *Calliste mexicana* † *media* (Novit. Zool. ix. 1902, p. 19: type from Maipures, Orinoco River). This subspecies, which in the coloration of the lower parts is exactly intermediate between *C. m. mexicana* from Cayenne and Surinam, and *C. m. vieilloti* of Trinidad, inhabits the Orinoco valley from the delta (Guanoco) up to Maipures &c., the banks of its southerly tributary, the Caura, as well as the western parts of British Guiana. The well-known *C. mexicana boliviana* (Bonap.) is the western and southern representative of this section, being found in Eastern Colombia, Eastern Ecuador, Peru, and Brazil south of the Amazons, down to Northern Bolivia.

In 1903, Count Berlepsch pointed out that under *Calliste festiva* two easily distinguishable races had been united by ornithologists, calling also attention to the fact that the name *festiva* had to give way to the previous term *cyanocephala* of Müller. The typical *C. cyanocephala cyanocephala* is shown to range from Santa Catharina north to Espiritu Santo, while the specimens from Bahia (and Pernambuco) which differ in their smaller size, narrower orange spots to the median upper wing-coverts, and especially in the much clearer coral-red instead of deep scarlet sides of the head and nape, are provided with the new designation, *C. cyanocephala corallina* (Orn. Monatsber. xi. p. 18).

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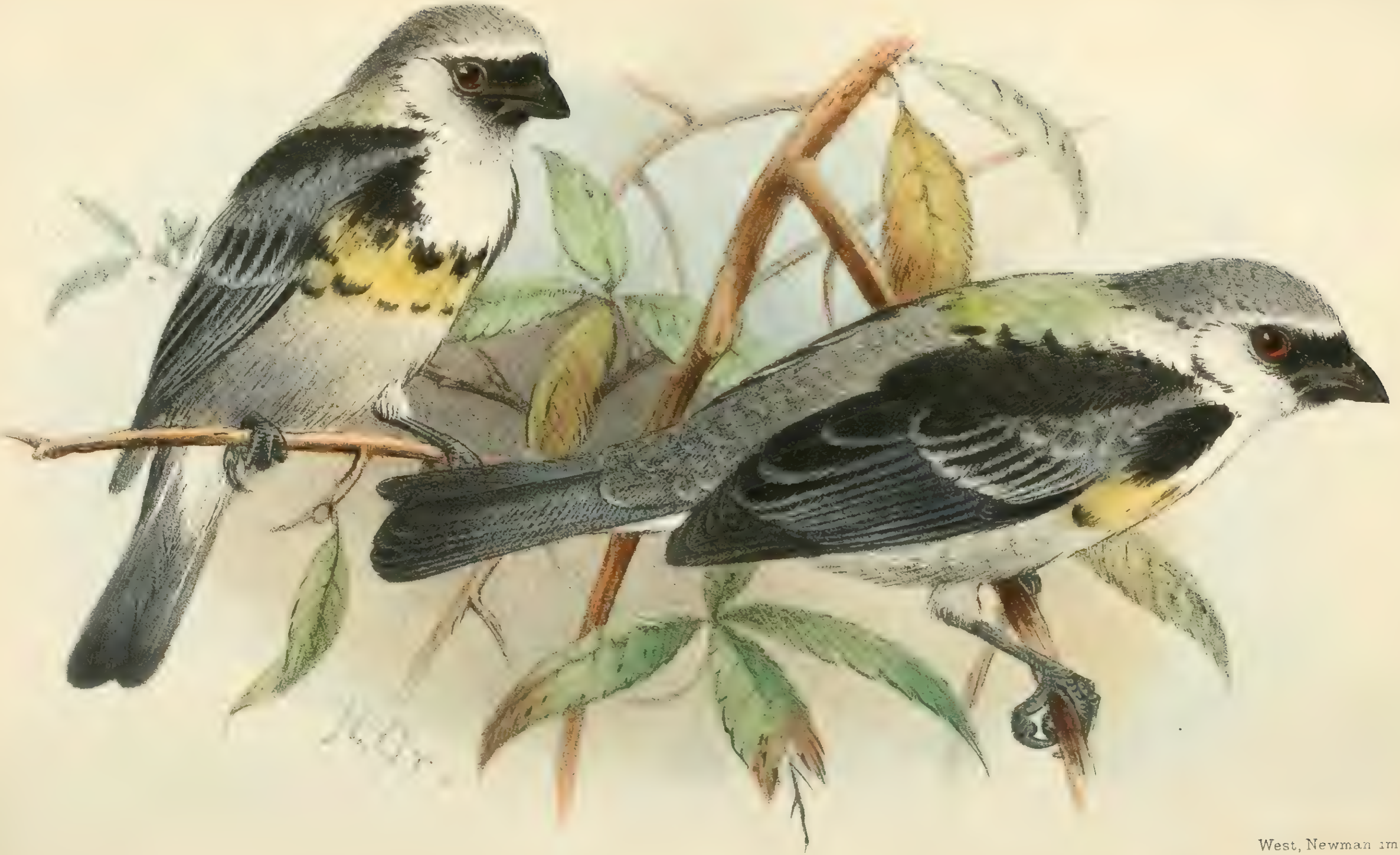
* Berlepsch & Stolzmann, 'Ornis,' xiii. pt. ii. 1906, p. 109.

† This specific name ought to replace *flaviventris*.

In their joint paper on Kalinowski's Peruvian collections, Count Berlepsch and Dr. Stolzmann discriminated *C. argentea fulvigula* (type ex Tambillo, N. Peru), while *C. a. viridicollis* Tacz., from Huiro, is shown to be the same as the birds from Central Peru, viz. *C. a. argentea* ('Ornis,' xiii. part ii. 1906, p. 80).

Mr. Bangs, in 1908, distinguished *C. gyroloides deleticia*, basing his description upon three adult birds taken by Mr. Mervyn G. Palmer at San Antonio, Western Colombia (Proc. Biol. Soc. Wash. xxi. p. 160). Its chief characteristic, when compared with *C. g. gyroloides* (Lafr.), is the lack of the bright yellow shoulder-patch. We have, in the Munich Museum, a good series from various localities in the Western Cordillera of Colombia, as well as several specimens from Rio Lima and "Bogotá," in all of which the lesser wing-coverts are green, not bright yellow. Yet more information about the ranges of the two races is required, for skins from Paramba, N.W. Ecuador, Quito, and Chanchamayo, Central Peru, agree with the Central American bird in the possession of the yellow shoulder-patch!

The last addition to the genus *Calospiza* was made by myself when, in 1909, I described *C. palmeri* as a new species. This beautiful bird, of which a detailed description will be found in the 'Revue Française d'Ornithologie,' no. 4, August 1909, pp. 49–50, was also discovered by Mr. Mervyn G. Palmer, in October 1908, at Sipi, a place situated on the river of the same name, in the province of Chocó, Western Colombia. *C. palmeri* agrees in general form and shape of the bill with *C. brasiliensis* (Linn.), but is very unlike it in coloration. In fact, it needs comparison only with *C. cabanisi* (Scl.), from Western Guatemala, which, however, differs in many important characters. The black on the face is much less extended, being restricted to the lores and a narrow line across the forehead and round the base of the lower mandible; the pileum is of a dull dark blue with the bases of the feathers largely black; the interscapular region



West, Newman imp.

CALOSPIZA PALMERI.

is metallic grass-green; the lower back and rump are dull azure-blue instead of pale bluish grey; the sides of the head and throat dingy bluish green instead of pure white; the remainder of the lower parts is bluish white, more whitish in the middle, decidedly tinged with bluish green on the flanks; the feathers of the chest are black with the slightly attenuated tips bluish white, but there is no trace of the golden yellow tinge, so conspicuous a feature in *C. palmeri*; the lesser wing-coverts, bluish grey in the latter, are metallic azure blue, more greenish blue at the tips, and shading into violet towards the edge of the wing; the edges of the median and greater wing-coverts, as well as those of the remiges and rectrices, are dull azure blue in *C. cabanisi*, bluish grey in *C. palmeri*. In the former the base of the lower mandible is pale brown, while the latter has the bill entirely black.

The type of *C. palmeri* (from which the figure (Pl. V.) is taken) is in the Zoological Museum of Munich.

XIV.—*On the Great Invasion of Crossbills in* 1909.

By Joseph I. S. Whitaker, F.Z.S., M.B.O.U.

The following notes are the results of an inquiry which I have attempted to make regarding the exceptional, and, so far as regards recent years, I may say unprecedented, invasion of the Common Crossbill (*Loxia curvirostra*), which has occurred during the past summer and autumn throughout a considerable portion of Europe. This inquiry, I may at once observe, has no pretension to being a searching or exhaustive one. It was, indeed, my original intention to write of the Crossbill invasion so far as regards Italy alone, but the consideration that it was a matter which concerned the whole of Europe has induced me to extend my remarks to the wider sphere.

As in the case of Pallas's Sand-Grouse (*Syrrhaptes paradoxus*), partial, although occasionally very considerable, migrations of the Crossbill occur, from time to time, at irregular intervals, varying greatly in their numerical importance, as well as in their extension and duration. The invasion of the past year, however, has been of such magnitude and so wide-spread that it cannot fail to have attracted the attention of most ornithologists in our own country, as well as abroad.

So far as I am aware, no Report of a comprehensive nature, embracing the whole of the European Continent, has as yet been published regarding this highly interesting ornithological event, although I understand that at least one such Report is in course of preparation on the Continent, and we may therefore shortly expect to be placed in possession of full details and much valuable information on the subject. Meanwhile I may say that some interesting local notes and letters regarding the course and progress of the invasion have appeared from time to time during the past few months, in England as well as on the Continent, and some noteworthy particulars have been obtained and recorded concerning it.

Foremost among these particulars, so far as relates to our own country, may be mentioned those published in 'British Birds,' and specially some notes by Mr. H. F. Witherby in the November and December parts of that journal, the latter, moreover, being accompanied by a series of maps, cleverly drawn up by Commander Lynes, illustrating the extent and progress of the invasion of Crossbills in the British Islands. Letters have also appeared from time to time in the 'Field' recording the occurrence of this species in various parts of the United Kingdom and abroad *.

In Germany, as well as in Austro-Hungary, and generally, I may say, throughout Central Europe, our brother ornithologists have not been idle in collecting notes and information regarding the unusual appearance of Crossbills in their respective countries.

In France an inquiry into the subject was opened in the columns of the 'Revue française d'Ornithologie' last autumn, and some interesting information has been obtained.

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* The details given in the 'Annals of Scottish Natural History' for 1909 and 1910 should also be consulted.—Edd.

In Italy articles and letters recording the extent and progress of the Crossbill invasion in that country have been published in the Journal 'Avicula,' in the 'Bulletin' of the Italian Zoological Society, and in some local newspapers, and further information, it is to be hoped, may still be forthcoming, not only from that country, but also perhaps from other parts of South Europe.

Before giving the statistics which I have been able to obtain regarding the occurrence of Crossbills in various parts of the Continent, I wish to make a few remarks of a general character concerning the subject in question, and specially with reference to the following points connected with it, viz.: the cause which has determined or brought about this erratic migration or wandering of the species; the country or countries from which the birds have chiefly come; and, lastly, the influence or governing force, if there be any, which has regulated the course, expansion, and duration of the migration.

Taking these points in the order above-mentioned, and commencing with that of the cause of this unusual movement on the part of a species not a true or regular migrant, the reason which naturally first presents itself to one's mind is that of a scarcity of food in the bird's habitual range; and this, I venture to think, is probably the right one.

The Crossbill, as is generally known, is at times a veritable vagrant or gipsy among birds, as it has somewhat appropriately been styled, its roving on such occasions being apparently influenced by a lack of sufficient nutriment in the northern coniferous forests which are its chief home; and this failure in its natural food-supply has probably been the cause of the species wandering in the present, as it has doubtless been in previous, instances.

The exceptionally severe weather that prevailed throughout a considerable portion of the European Continent during the previous winter and spring months probably interfered with the development and ripening of the cones in the northern pine and fir woods, and brought about this failure in the bird's principal food.

Professor Robert Collett, of the Zoological Museum at Christiania, in reply to my inquiry, has kindly written to me on the point as follows:—

"For several years there has *not been a good cone-year* for the spruce-fir in Norway, and the Crossbills have been very scarce with us for several years. This summer we observed small flocks of *L. curvirostra* in the beginning of July, not earlier. In the course of the month they totally disappeared, and we have not seen them since. They tried to eat the young green cones of the Larches in the gardens. I did not observe them in the forest, but heard that some were seen there, but the flocks have never been great with us this year. I should think that the wandering swarms came from the east."

The tardy ripening, or even in some cases the absolute lack, of the Crossbills' main sustenance was probably more or less general last year, not only in Northern Europe, but in the coniferous forests further east and south. Even from Italy reports of the scarcity of fruit on the pine- and fir-trees have been recorded. Prof. A. Bonomi, of Rovereto (Trent), writes that in that district, owing to the tempestuous weather experienced in the preceding spring, as he had himself ascertained by personal observation, the coniferous woods were absolutely bare of fruit. Even so far south as Sicily vegetation generally was in a most backward state last year, owing to the severities of the previous winter and spring.

On the whole, there appear to be good grounds for supposing that the Crossbills' food-supply was deficient last year throughout the whole of the species' true habitat; and until some better reason can be assigned for it, I think we are justified in considering that fact to be the reason of the birds wandering from their home.

The theory of an unusually prolific breeding-season having driven a considerable number of the birds to seek a home elsewhere is hardly to be entertained, nor could it, I may venture to think, suffice to account for the extraordinary migration experienced last year.

With regard to the country or countries from which the vast legions of Crossbills last year migrated and spread over the greater part of Europe, appearing even in districts where the species had rarely been observed before, it is difficult, not to say impossible, to single out any one particular locality as the base or centre of the movement. It is indeed presumable, particularly bearing in mind its extent and proportions, that this migration had its origin generally throughout a large tract of country, the coniferous forests of which had all been equally affected by the inclemency of the past winter and spring. Under the circumstances, therefore, I think we may look upon the movement as having originated throughout the entire northern portion of Europe, and probably still farther eastward, possibly even as far as Siberia.

The presence of occasional examples of the Two-barred Crossbill (*Loxia bifasciata*) among the wandering flocks of the commoner species, although not conclusive, would point to there having been at least *some* migration from the more eastern portion of North Russia and probably also from Asia.

The third point to which I have alluded, viz. the possibility of a guiding influence which may have directed the course and progress of the species' movements, is, no doubt, a matter for conjecture. Has there been any such influence, or have the birds, once started on their journey in search of food, wandered at random from district to district, whithersoever caprice may have taken them, and after exhausting the supply of food in one locality, moved on to another, until they found a fresh store? The latter conjecture is possible, and the fact of the birds remaining in certain localities where food was abundant for a considerable length of time is in favour of the argument; but, on the other hand, it seems hard to believe, and it is more natural, I think, to suppose that, as in the case of ordinary or regular migration, some instinct has guided the birds on their journey, and brought them back again safely to their homes. It is presumable, at least, that most, if not all, the surviving wanderers will eventually return to their native home, if they have not already done so, and there find an abundant supply of food awaiting them in the tardily ripened cones.

With regard to the extent of last year's migration, it may be said to have embraced practically the greater part of Europe, having reached southward as far as the Mediterranean, expanding laterally on both sides, east and west, almost as far, perhaps, as the limits of our Continent. The migration does not appear to have extended to any part of North Africa, although the Italian Islands in the Mediterranean, and even Malta, were visited by the birds in considerable numbers. Thinking it likely that some of the wanderers, being so near the African coast, might have crossed over to Tunis, I wrote to M. Blanc of that city in July and again in October, inquiring if any Crossbills had been observed there, but the reply on both occasions was in the negative. Had any of the birds crossed over to Tunis I think that they would not have escaped the notice of the sharp-eyed Arab bird-catchers; and they could hardly have been confused with the local subspecies, *L. curvirostra poliogyna*, which inhabits the higher mountains of the interior and does not approach the coast.

Judging from the reports so far received, the migration, although fairly general throughout Europe, seems to have been more conspicuous in the central and eastern portion of the Continent than further west, but, looking at the map, this seems only natural. What at first sight strikes us as rather remarkable is that the small islands, both those off our Scottish coast, as well as those in the Mediterranean, some of them particularly bare of vegetation, should have been visited by the birds to the extent they have been. This, however, is not so surprising as at first it would appear, for naturally there is more concentration, and less diffusion, of the arriving birds on the small islands than on the large, or on the mainland, and they are less likely to pass unobserved than when spread over a larger expanse of country.

Although met with in almost every description of country, whether mountainous or plain, the pine and fir districts have naturally attracted the wanderers more than others, and held them for a longer period. In those districts where food has been plentiful, and the birds have been unmolested, they have settled down, and, in many cases, remained for a considerable length of time. The 'Field' of December the 4th contains an interesting note recording the abundance of Crossbills (*L. curvirostra*) in West Sussex and mentioning the fact of a small party of the birds having daily, for the space of two or three months, frequented and fed on the cones of a large Douglas-fir at Leonardslee, under which tree were to be seen quite five barrow-loads of stripped cones lying in heaps! The fir-tract of country in this neighbourhood is ideal ground for the species, affording abundant nutriment, and it is not surprising that the birds should have chosen to linger there so long.

While on the subject of food, it may be observed that the recent invasion has afforded interesting cases of Crossbills feeding upon many substances which we should not have imagined would enter into their diet, and which under ordinary circumstances would probably not do so. In addition to the seeds of all species of conifers indiscriminately, the birds have been observed feeding on many kinds of orchard fruit, the seeds of various grasses and low-growing plants, as well as on the actual flowers of some plants and on the Aphids of different species. A correspondent writing from Lombardy comments on the unusual spectacle of large flocks of Crossbills feeding in the open fields in the neighbourhood of Como. As to the duration of last year's Crossbill invasion, it may roughly be calculated to have extended over a period of about six months, having commenced in the spring and lasted until the autumn, although a certain number of the birds appear to have remained in some localities much later and even into mid-winter.

As may be gathered from the recorded observations, there seems also to have been a considerable variation in the date of the first appearance of the Crossbills in different countries, but this is not to be wondered at. Allowance must be made for the probability, not to say the quasi-certainty, of the first arrivals having passed unobserved in many localities, and generally for a lack of properly recorded observations.

The following statistics which I have obtained regarding last year's Crossbill invasion are fairly ample in some few cases, but very meagre in others. Those from Italy I give at greater length than those from other countries, from which detailed reports have either already been published or will probably be so shortly.

British Isles.—Judging from the statistics given in 'British Birds' (vol. iii. pp. 82, 123, 162, 190–194, 226–228), and from reports published in other periodicals and newspapers, the Crossbill-invasion of 1909 was fairly conspicuous throughout a considerable portion of our country, the eastern, and more particularly the south-eastern counties, as well as the small islands off the Scottish coasts, having apparently been visited by the wanderers more than other parts. The mainland of Scotland, Ireland, Wales, and the extreme south-western portion of England appear to have been the least visited by the Crossbill, although even from these districts a few cases of its occurrence have been reported, and no doubt many more have escaped notice and remained unrecorded.

On the whole, it may be said that the wave of the Crossbills' erratic migration spread practically over the whole of the British Islands, having been more marked in the eastern than in the western portion of the Kingdom.

The first arrivals of the bird appear to have been observed towards the end of June, from which date onwards, throughout the summer and autumn months, the species was met with, in greater or lesser numbers, in most parts of our country.

At Fair Isle the earliest arrivals were observed on the 23rd of June; the numbers of birds that swarmed on this small island were very great, as many as 300 being seen some days. The same may perhaps be said of the Shetlands and Orkneys.

There can be no doubt whatever that, with the exception of a very few cases, all the Crossbills that have come to our shores across the North Sea belong to the typical continental form, *L. curvirostra*, or *L. curvirostra typica* for those who adopt trinomials. Occasional examples of the Two-barred Crossbill (*L. bifasciata*) have been met with among the flocks of the commoner species, and a few specimens of this more eastern Crossbill are recorded as having been obtained, notably at Fair Isle and in the Flannan Islands.

The greater number of the recorded occurrences of Crossbills in the British Isles having been carefully detailed in 'British Birds,' it is hardly necessary to recapitulate them here.

France.—As was to be expected, last year's invasion of Crossbills extended westward to France, although its expansion and numerical importance there were apparently less considerable than further eastward and throughout the Central European countries. It also seems to have been somewhat more marked in the east of France itself than in the west, but this perhaps is not surprising.

To the kindness of Dr. Louis Bureau, Director of the Natural History Museum at Nantes, I am indebted for the following interesting particulars regarding the occurrence of the Crossbill in some of the French departments.

Côte-d'Or.—According to M. Paul Paris, Crossbills were first observed by him in this district about the middle of August, and frequently after that date. On the 18th of October he received an example of the species, in the flesh, from Dijon.

Aube.—Crossbills are reported as having been observed in this district about the end of August. Both here and in Côte-d'Or the species is of irregular passage, and had not been previously observed for three or four years.

Haute-Saône.—M. Paris received three examples, in the flesh, from this district about the end of September, and saw a flock of Crossbills settled on a fir-tree opposite the Autun Museum on the 11th of October.

Haute-Marne.—M. Paris received an example from this district on the 27th of October, from which date until the end of November he says hardly a day passed without Crossbills being observed there.

Sarthe.—According to M. l'Abbé Lamoureux, many Crossbills were observed in this district on the 8th and 9th of July, a single individual of the species on the 20th of September, and a few on the 14th of October.

Vendée.—M. Plocq reports having obtained an example of the species near Roche-sur-Yon, and having observed small flocks on passage in this district.

Loire-Inférieure.—A nephew of Dr. Bureau obtained an example out of a small party of the species that had remained in the neighbourhood of Birochère, in this district, between the 8th and 15th of August.

The 'Revue française d'Ornithologie' of Paris very sensibly opened an inquiry last autumn regarding the recent Crossbill invasion, and collected several interesting notes, some of which are comprised in the remarks given above.

In the January (1910) number of that journal, a copy of which has kindly been sent me by M. Louis Denise, M. F. Daguin states that Crossbills had never been so abundant in the Côte-d'Or as they were last autumn, and particularly in the month of November, when the birds were to be observed in large numbers in many localities of this department, and particularly in the Chatillon-sur-Seine district.

M. Lomont reports Crossbills having been seen, in greater or lesser numbers, at Manonville, Meurthe-et-Moselle, between the 10th of July and the end of September, after which date some were again observed on the 10th of October and on the 15th of November.

M. Roger Reboussin mentions having seen a pair of Crossbills at Sargé (Loir-et-Cher) on the 13th of November. Considerable numbers of the species are also reported as having been observed in the neighbourhood of Cette in the south of France.

Belgium.—Crossbills are reported as having been numerous in several parts of this country during the past year, but I have no special information on the subject. The species is not a common one in Belgium, and is of irregular passage there.

Netherlands and Denmark.—What I have just said regarding Belgium will probably also apply to the Netherlands and Denmark.

Germany.—The recent invasion of Crossbills appears to have been of considerable magnitude and to have spread generally throughout the whole or greater portion of Germany. According to reports published in the 'Ornithologische Monatsberichte' and from information received from other sources, large numbers of the species were observed in many districts from the middle of June onwards throughout the summer and autumn. Among such districts may be specially mentioned the coast-regions of the North Sea, Heligoland, the East Frisian Islands, Pomerania, Hanover, Brandenburg, the Rhine Provinces, Saxony, Bavaria, Würtemberg, and Baden. No doubt there have been other districts and localities where the incursion has been very noticeable, but detailed information concerning them, and regarding the invasion generally, will probably be forthcoming in later numbers of the above-mentioned journal and in other publications.

Switzerland.—As regards Switzerland Dr. Goeldi, of Berne, in reply to my inquiries, has kindly sent me a copy of a paper by Dr. H. Fischer-Sigwart, of Zofingen, published in the Verhandlungen of the Schweiz. Naturforsch. Gesellschaft for 1909, which contains an excellent account of the invasion of the Crossbill into that country. It is sufficient to say that in 1909 it was observed in many Cantons of Switzerland, and in some places in large flocks. It is said to have nested in July near Zofingen, and in other places.

Austria-Hungary.—The Crossbill invasion appears to have been conspicuous throughout the greater portion of these countries, and vast numbers are reported as having been observed in many districts.

A report on the subject, published in the Hungarian ornithological journal 'Aquila' for 1909, a copy of which has been kindly sent to me by Dr. Otto Herman, gives some interesting particulars regarding the incursion in Hungary. After a few remarks of a general character and concerning the occurrence of the Crossbill as a resident and breeding species in the Carpathian Mountains and in other parts of the country, a list is given of the various localities from which reports had been received, in response to the invitation which had been issued by the Hungarian Central Bureau for Ornithology. From these reports it is evident that the recent invasion was on a vast scale in Hungary, and that it extended generally throughout the country, having commenced in June, reached its height in July, and continued until the late autumn. With the exception of a single specimen of the Two-barred Crossbill (*L. bifasciata*), obtained in the district of Arva, and a few other individuals of that species reported as having been observed in the vicinity of Zotyom, the wanderers appear to have all belonged to the common species, *L. curvirostra*.

Allusion is made to the scarcity of cones on the pine- and fir-trees in Hungary during the past season, and some interesting information is given regarding the various substances, other than such cones, on which the Crossbills had been observed feeding.

From Galicia, Bohemia, Salzburg, the Tyrol, and the Trent districts, Crossbills are reported as having been observed as more or less plentiful throughout the past summer and autumn. In the last-named district the incursion seems to have been particularly marked.

Prof. A. Bonomi, of Rovereto, writing in a local periodical last June, reported eight individuals of the species as having been seen at Madonna del Monte, near Rovereto, as early as May 30, and alluded to the possibility of this being the prelude to an abundant passage of the birds. He was not wrong, for from that day forward the wandering Crossbills continued to arrive in gradually increasing numbers, the invasion at last assuming such proportions as to constitute a veritable phenomenon.

In a paper on the subject, dated August the 12th, published in the Italian journal 'Avicula,' Prof. Bonomi gives some interesting particulars regarding the invasion, which he had collected from his friends in various parts of the Trent district. According to his account, the birds not only visited the neighbouring woods, but invaded the village gardens and orchards, even perching on the houses in some cases. The poor birds, however, naturally remarkably tame and confiding, seem to have met with scant hospitality, and large numbers of them were killed or captured alive, over 500 individuals of the species having been sold one day at Ronzo. Occasional examples of the Two-barred Crossbill (*L. bifasciata*) appear to have been met with among the flocks of the common species. From what Prof. Bonomi says, no invasion of like proportions had ever been known in those parts before, although the Crossbill appears to be in the habit of visiting the district in certain numbers every three or four years, and in the years 1889 and 1905 was abundant. Prof. Bonomi alludes to the scarcity of cones on the pine-trees in his neighbourhood, and adds that in some districts the conifer forests were absolutely bare of fruit.

From a letter from Prof. Bonomi I learn that the passage of Crossbills continued throughout the autumn.

Italy.—The Crossbill invasion of 1909 was on a vast scale, and, so far as can be remembered, of unprecedented numerical importance throughout the greater part of the country, exceeding in quantity all previous incursions of the kind experienced of recent years. Not only has it spread throughout a considerable portion of the peninsula, but it has also extended to most, if not all, of the Italian islands, both large and small, and even to Malta, which is considered as part of the Italian zoogeographical region.

Naturally, some districts have been visited by the wandering birds in greater numbers than others, owing to their being situated on the direct line of flight, or for other reasons; and, naturally also, reports and observations from the more thinly populated districts of the south of the peninsula have been fewer and more meagre than from many other parts; but, making due allowance for these circumstances, the invasion may be looked upon as having been fairly general throughout Italy, with the exception of its extreme north-western portion.

Somewhat unaccountably, and strange as it may seem, Piedmont does not appear to have been visited by the Crossbills as other parts of the kingdom have been during the past year. This is all the more surprising considering the alpine character of its northern boundary and the large tracts of fir-clad country it possesses. My personal experience, however, confirms the general report, for during a period of five weeks which I spent in the Val d'Aosta last summer, although constantly on the look-out for birds, I never once saw a Crossbill, nor could I learn of any having been seen by others during that time. The species is, however, said to be resident in some of the northern districts of Italy, and I understand that it breeds in some parts of the Val d'Aosta itself.

It has also been said to breed in some of the higher districts of the Apennines, although hitherto this statement has, by some authorities, been considered doubtful. There would, however, appear to be unquestionable evidence of the bird having bred during the past year in the provinces of Emilia and Tuscany. One case of such breeding is recorded by Count Filippo Cavazza, in the 'Bulletin' of the Italian Zoological Society for 1909, as having occurred, in May, in the gardens of Prince Hercolani near Bologna; another instance has kindly been notified to me by Count Arrigoni degli Oddi as having occurred, also in the month of May, on an estate belonging to the Marchesa Paulucci-Panciatichi, near Vallombrosa.

To the eastward of Piedmont, and throughout the Italian lake-district and the valley of the Ticino, the incursion of Crossbills was very considerable, large numbers of the species having been observed in several localities from the middle of June onwards until September.

So far as regards the remainder of Northern Italy, from information which has kindly been communicated to me by Professor Martorelli and Count Arrigoni, I gather that the invasion of Crossbills was very noticeable throughout many districts of Lombardy, Venetia, and Emilia during the months of July and August, and that considerable numbers of the birds were killed or netted during the latter month, when the close season had expired. The height of the passage was then past, however, and the number of fresh arrivals was rapidly waning, although even throughout September and October a few continued to be seen.

Out of a large number of Crossbills which had been netted at Alzate, in the Brianza district, Prof. Martorelli mentions having seen an example, a fine male, which in coloration and marking answered to Schlegel's description of *L. rubrifasciata*, but he seems to think that this may be merely the fully adult form of *L. bifasciata*, of which species he had been given to understand other examples had been captured in the Brianza district.

In Milan and other Italian towns it has been a common sight during the past summer and autumn to see Crossbills in cages. Few species adapt themselves to confinement so easily as the Crossbill does.

Count Cavazza, in the journal above mentioned, gives some interesting particulars regarding the incursion of Crossbills in the Emilian province, and more especially in the vicinity of Bologna, where a few of the species, the vanguard of the wanderers, appear to have arrived as early as the first fortnight of April. These were followed by considerable numbers towards the end of May, and by still larger numbers about the middle of June, after which date the passage began to diminish in intensity, although the birds apparently established themselves in the pine-woods which are abundant in that neighbourhood, and remained there for several months.

Count Cavazza points out what is, no doubt, a noteworthy feature in the recent Crossbill invasion, viz., the early date of its commencement, for, as a rule, the irregular visits of this species to Italy are effected during the late summer and autumn months.

Speaking of the extraordinary tameness of the species, he says that he had frequently known a shot fired at a party of these birds perched on a tree, and some of their number killed, without the survivors taking flight. What is still more surprising, however, he states that he once saw some Crossbills feeding on a fir-tree which was being felled by the woodcutters, and that on the branch on which the birds were perched falling to the ground they followed it there and continued their meal, in no way disconcerted.

In Liguria, according to Prof. Regalia, large numbers of Crossbills were observed during the month of September, and notably in the neighbourhood of Cornigliano and Sestri Ponente. Further west, and along the Italian Riviera, the species appears to have been abundant in the autumn, and even as late as the end of October.

I am indebted to Signor Cesare Ragionieri, of Florence, for some interesting notes regarding the incursion of Crossbills in Tuscany and the Marche. The first arrivals in these provinces appear to have been noticed about the middle of July, and from that date onwards, until the end of August, the passage of the birds continued more or less plentifully. After that date it gradually decreased.

In the neighbourhood of Leghorn and Pisa, and along the Maremmana coast, Crossbills were observed in extraordinary numbers throughout a portion of the summer and until the beginning of October.

Signor Ragionieri speaks of the arrival of the birds in the vicinity of Rimini, on the Adriatic coast, as being "simply phenomenal," and mentions the case of a local birdcatcher having snared no less than one thousand of them within the space of about a month! Although in some parts of the country the close-time appears to have been respected, in many others it was unfortunately not so, and vast numbers of the poor birds consequently fell victims to the nets and traps set for them, their excessive tameness rendering their capture an easy matter.

Signor Ragionieri himself frequently observed the Crossbills arriving of a morning, in flocks of varying numbers, and states that they always came from the south-east and proceeded in a north-westerly direction.

Signor Coli, of the University of Rome, also alludes to the great abundance of Crossbills on the Adriatic coast, and notably in the neighbourhood of Tronto and Ascoli-Piceno in the Marche. According to information received by him, the species was first observed in those districts early in June, and continued in evidence there until the end of August, after which date it was not often seen, although it did not entirely disappear until October.

During the period that the birds remained in these localities they took up their quarters in some pine-woods, where they congregated in large flocks of from 300 to 400 individuals, sallying forth daily to drink at the water-courses made by the country folk for the purpose of irrigation.

Throughout the province of Latium and the Roman Campagna, as well as in the immediate vicinity of Rome itself, Crossbills appear to have been frequently observed during the summer months.

From the more southern provinces of the peninsula reports regarding the recent invasion have been few and far between, but, from personal inquiry, I have ascertained that considerable numbers of Crossbills were observed in the neighbourhood of Naples during the early summer, and it is presumable that the same will have been the case generally throughout the country still further south.

Around Bari, on the Apulian coast, the species is reported as having been extraordinarily abundant on the 12th of July, and it is also stated as having been numerous at Polignano and Triggiano on the same coast.

In Calabria it is also reported as having occurred abundantly, and particularly in the neighbourhood of Cotrone, Catanzaro, and Reggio during the months of July and August.

Coming now to the Italian islands, and commencing with Elba, as having been the first in which the Crossbill invasion of last year was observed—or, at any rate, from which it was signalled, the news having been communicated by a telegram from Portoferraio to a leading Roman newspaper,—it would appear from articles published by Prof. Giacomo Damiani in 'Avicula,' and in a local newspaper, that the incursion was noticeable throughout the entire island, commencing early in July and continuing throughout that month, although constantly and rapidly diminishing in intensity. Prof. Damiani adds that a good many of the birds reappeared about the middle of August, disappearing again shortly afterwards. He further states that it was twenty years since the species had been first observed by him in Elba, and that he had never known anything to equal last year's invasion.

From Corsica I have received no information on the subject, but there can be little doubt that the invasion extended to that island.

In Sardinia, according to information received from Sig. P. Bonomi and other correspondents, large numbers of Crossbills were observed in various parts of the island, and particularly in the vicinity of Cagliari, during the summer and autumn, and even as late as the month of October.

On the island of Capri, from information given me when passing through Naples in July last, I ascertained that considerable numbers of the species had been seen during the first fortnight of that month. According to more recent information received by Signorina Picchi, of Florence, the species reappeared on the island of Capri in large numbers in the month of August, but did not remain there long, which is not surprising, considering the lack of trees on the island and the persecution which the birds meet with there at the hands of the natives.

In Sicily the Crossbill invasion was very noticeable in various districts, and more especially in the north-western portion of the island. Although numerically it was perhaps less important than in some more northern countries, there can be no doubt that a very large number of the birds reached this southern latitude, and what is also very noteworthy is that many of the birds continued to be observed in the island until quite late in the year, some of them indeed having actually been seen in the neighbourhood of Palermo in January of the present year. As a rule, the very irregular and fitful appearances of the Crossbill in Sicily occur during the late summer and autumn months, and the species is not seen there in winter.

The first arrivals of Crossbills in Sicily last year appear to have been noticed early in July. One of my gardeners at the Villa Malfitano, near Palermo, reported having seen some of the species on the 3rd or 4th of that month. On the 10th of July I myself observed several Crossbills in my garden, feeding on the pine-trees (*Pinus maritima*) which are plentiful there, and I secured a few specimens of them. The birds were in small flocks of from half a dozen to twenty individuals, young of the year predominating. On the 11th of July some of the birds were again observed in my garden, but in diminished numbers, and during the next few days the species was only observed occasionally. During the first fortnight of July the weather at Palermo was exceptionally cool for the season, northerly or north-westerly breezes prevailing most of the time. On the 10th of July the breeze was particularly fresh.

According to information received from various sources, Crossbills were seen in considerable numbers on the 10th and 11th of July throughout the entire plain of Palermo, as well as in the neighbouring districts. About that date they appear to have also been observed in the vicinity of Trapani and Marsala, whence examples of the species were forwarded to me. Towards the end of July a good many individuals were reported as having been seen at Syracuse, as well as at Lentini and other localities on the east coast of Sicily.

Later, during the month of August, fresh arrivals of the species were observed throughout the plain of Palermo, as also in the more inland districts of Corleone, San Giuseppe d'Jato, and Piana dei Greci. Crossbills appear to have been observed, at intervals, throughout the entire month of August in the neighbourhood of Palermo.

In September they were absent, or, at any rate, I have no note of any having been met with in Sicily during that month. In October, however, they were again observed in considerable numbers near Palermo, several of the birds having been seen in my garden between the 15th and 20th of that month. No examples of the species having been observed in the month of November, and the invasion having naturally been supposed to have ended, it was somewhat of a surprise to hear of fresh arrivals of Crossbills near Palermo towards the end of December. According to information recently received, I learn that a few Crossbills were seen in my garden at the Villa Malfitano on the 29th of December, and again on the 1st of January, and that several individuals of the species had been observed, and examples obtained, in the vicinity of Villa Grazia, near Palermo, on the 3rd of January, 1910.

Among the number of Crossbills which have been shot or captured in Sicily during the recent invasion, so far as I am aware, there have been none belonging to the Two-barred species, *L. bifasciata*, or to any but the common form of *L. curvirostra*.

On the small island of Ustica, about forty miles to the north of Sicily, Crossbills were observed in July.

On the island of Favigrana, one of the group of the Ægades, lying off the north-western corner of Sicily, large numbers of Crossbills were reported as having been seen on the 10th of July, and two examples of the species were sent to me from that island a day or two afterwards. In August the Crossbills appear to have again visited Favigrana in considerable numbers.

Of the occurrence of the species in the island of Malta I have received the following interesting particulars from Mr. Henry Twelves:—"About the 9th of July last Crossbills appeared in flights of about ten or fifteen each, and were abundant for about a week on the north and east sides of the island. They subsequently collected wherever pine-trees were to be found. Many were trapped, some very young, and very few males in full red plumage. Towards the end of August very few remained. They seem to have reappeared in small numbers in October. Northerly winds prevailed at the time they arrived, and fresher than in former summers. Another informant tells me that altogether about seventy must have been trapped, and that it is about twenty-six years since these birds last visited the island. Some attribute the visitation to the extraordinary prevalence of strong northerly breezes last summer."

From Greece and from countries lying to the eastward of the Adriatic I have no information on the subject, but it is very probable, I think, that the wave of the great Crossbill-migration extended in this direction also.

In the neighbourhood of Constantinople, however, according to information kindly given me by Colonel Elia, of the Italian Embassy, and Mr. Eyres, our Consul General, it would appear that nothing had been noticed in the way of any unusual passage of the species during the past year.

Passing from the east to the extreme west of our Continent I will conclude with

Spain and Portugal.—From the scanty information so far received from these countries, it appears to be uncertain whether last year's invasion of Crossbills extended so far west.

With regard to the former country, reading the account given in 'British Birds' (vol. iii. pp. 192–193) of Crossbills having been observed in Andalusia last July, I felt inclined to believe that the incursion of the species from the north had undoubtedly reached as far as that region, but a footnote informed us that two specimens of the Crossbill met with in Andalusia, which had been forwarded for identification, proved to be of the distinct Spanish form *L. curvirostra hispana*, and that this incursion of Crossbills into Andalusia had therefore no direct connection with the irruption from Northern Europe.

So far as regards Portugal, the only information which I have been able to obtain regarding the appearance of Crossbills last year in that country I owe to the kindness of Mr. Wm. C. Tait and his brother, Baron Soutellinho, of

Oporto. According to Mr. Wm. Tait, the Crossbill is a rare and occasional visitor in Portugal, merely appearing at irregular intervals. He informs me that a few individuals were observed in a garden near Oporto in November last, and that a friend of his at Coimbra University, between Oporto and Lisbon, had informed him that a large number of Crossbills arrived there in October, some of the birds being still in the neighbourhood at the time of his writing. Unfortunately no specimens had been secured, and on Mr. Tait writing to endeavour to obtain some, it was too late, for the birds had all disappeared. This is to be regretted, as it would have been interesting to have been able to establish the identity of these birds, and to know whether they formed part of the great invasion from North Europe, or whether they belonged to the local Spanish form, which is perhaps also resident in some parts of Portugal.

XV.—*Obituary.*

Dr. R. Bowdler Sharpe.

Richard Bowdler Sharpe died at Chiswick on the 25th of December, 1909, at the age of sixty-two. To the general public he was best known as the head of the Bird Department of the Natural History Museum at South Kensington, though, strictly speaking, this was not the official designation of the post which he so long occupied. To students and fellow workers throughout the world he was much more than this; for his profession was his hobby, and he worked at it with such unremitting energy and devotion as to distance all competitors in the amount and quality of the scientific work which he achieved. In his study of the vast collections under his charge he acquired an unrivalled knowledge of the bird-life of the world, estimated to include more than 18,000 species, almost any one of which he could name at sight, except in the case of closely allied forms, which would necessitate comparison with others. Further than this, he could tell offhand the particular part of the world from which it came, and approximately the limits of its geographical distribution. In addition, he could point out its characteristic habits, its affinities, and peculiarities of structure in such a way as to astonish those who came to him for information. It was this unrivalled knowledge, aided by an extensive acquaintance with the literature of his subject, that especially qualified him for the preparation of the great work of his life, the British Museum 'Catalogue of Birds,' completed in twenty-seven volumes, with several hundred coloured plates.

To appreciate how this came to be written we may glance briefly at the events of his career which led up to it. Eldest son of the late Thomas Bowdler Sharpe (whose name was well known in the forties as the publisher of 'Sharpe's London Magazine'), he was born in London on the 22nd of November, 1847, and, after being educated at Brighton, Peterborough (King's Scholar), and Loughborough Grammar Schools, entered the publishing house of W. H. Smith and Son in 1863. In 1867, after a year with the late Mr. Bernard Quaritch, he was appointed Librarian to the Zoological Society of London, a post which he occupied until 1872. With so good a zoological library at his command, it was not surprising that his early taste for natural history should have been fostered and developed, and in the year 1871 he commenced to publish some of the results of his studies in ornithology, which included a catalogue, extending to seventy-six octavo pages, of his private collection of African birds, and a monograph (one of the first of its kind) on that very attractive group of birds, the Kingfishers. This was issued in quarto, with 121 beautifully coloured plates by Keulemans, most of the figures being of life size. If Sharpe had published no other work than this it would have sufficed to establish his reputation as a scientific writer on birds; but this was only the beginning of a long series of useful volumes which he was destined to complete and give to the world in a form both attractive and instructive. In that same year he cooperated with Mr. H. E. Dresser in the commencement of a serial work on the 'Birds of Europe,' which, after the appearance of fifteen parts issued in their joint names, was completed by Mr. Dresser alone. This work, as many of our readers will know, is also in quarto, with fine coloured plates, and is so highly esteemed that when a copy occurs for sale by auction it usually fetches from £40 to £50.

As the collection of African birds above mentioned continued to grow in extent, it became evident to Sharpe that the text-books on the subject were inadequate to convey a proper idea of the richness of the African avifauna, and accordingly we find him undertaking a new and revised edition of E. L. Layard's well-known 'Birds of South Africa,' an excellent little manual at the time that it was written (1867), but not illustrated, and needing the incorporation of a great many species which have only come to light after its publication. The new edition by Sharpe, which was issued in parts between 1875 and 1884, formed, when complete, a royal octavo volume of 890 pages, with a dozen beautifully coloured plates. Meanwhile in 1872 he had quitted the library of the Zoological Society to enter upon his official duties as a Senior Assistant in the Department of Zoology at the British Museum, a post which he held until 1895, when he was promoted to be Assistant Keeper of the Department. From the date of his appointment in 1872 he seriously took in hand the preparation of the much needed Catalogue of Birds in the British Museum, and in two years the first volume of it was completed and published by the Trustees. Some idea of the magnitude of the undertaking may be gained when it is stated that this volume, the first of twenty-seven, contained nearly 500 pages, with fourteen coloured plates. Of the twenty-seven volumes of the great Catalogue Sharpe himself wrote eleven whole volumes besides portions of three others, and edited or assisted in the preparation of the remainder, which were undertaken by other specialists. Naturally the production of so long a series extended over several years, and, as if that were not work enough to occupy his daily thoughts, he found time before and after official hours to write and publish several other works of importance, as well as sections or parts of general works that were then in progress. Thus in 1875 appeared his section on "Birds" which formed part of the Zoology of the Voyage of H.M.Ss. 'Erebus' and 'Terror,' under the command of Capt. Sir James Clark Ross, R.N., and his treatise on the class Aves in 'Cassell's Natural History,' which was edited, in six volumes, by Professor P. Martin Duncan. Then came his Monograph on the Swallows, commenced with C. W. Wyatt in 1885. Between 1875 and 1888, after the death of John Gould, extraordinary as it may appear, he actually found time to complete the beautiful folio works which Gould had left unfinished, such as 'The Birds of Asia,' 'The Birds of New Guinea,' and the Monographs on the Trogons, the Humming Birds, and the Pittas or Ground Thrushes—all admirably worked out on the lines indicated by Gould. Similarly in the case of Seebohm's 'British Birds' Eggs,' the plates of which had been prepared but the text was unwritten at the time of Seebohm's death in November 1895, Sharpe came to the rescue and completed the work, which was published in 1896. This was, perhaps, the least satisfactory of all his publications; for, in the first place, he was handicapped by the fact (as stated in the Preface) that Seebohm "had planned out and settled the order of the plates," with the result that he had to adopt a most confusing classification which he could not approve; and, in the next place, he himself had not paid such close attention to British Oology as would enable him to do justice to the subject. The coloured plates are for the most part excellent, but the text was not up-to-date, even at the time it was written.

For several years, as recorder of the Class Aves, Sharpe undertook and accomplished an extraordinary amount of work for the 'Zoological Record,' which earned for him the universal appreciation and gratitude of ornithologists. Of his more popular publications mention should be made of the four small octavo volumes on 'British Birds' which he contributed to Allen's 'Naturalist's Library' (1894–97), and his 'Sketch-Book of British Birds,' with coloured figures in the text, published in 1898 by the S. P. C. K. In the same year appeared his 'Wonders of the Bird World,' containing the gist of the popular lectures given by him in different parts of the country, which, illustrated by lantern-slides designed by Keulemans, never failed to delight large audiences.

Nor should we omit to notice here his edition of White's 'Selborne,' which appeared in two volumes in 1900. His knowledge of the locality, where at one time he had a residence, and the ornithological observations which he made there, enabled him to supply many editorial notes of interest. For his sake, it is to be regretted that this work is disfigured by a number of full-page plates which are anything but artistic, and in many cases are grotesque. For this ill-fortune, however, he was not responsible.

To give here a list of the numerous papers contributed by Sharpe to scientific periodicals would be impossible in the space at my disposal. Suffice it to say that in the pages of the 'Ibis,' the 'Journal of the Linnean Society,' the 'Proceedings of the Zoological Society,' the 'Annals and Magazine of Natural History,' and even in foreign publications, such as the 'Bulletin' of the Zoological Society of France, and the 'Mittheilungen' of the Royal Zoological Museum of Dresden, as well as in the 'Notes from the Leyden Museum,' will be found an extraordinary number of contributions from his pen, many of which are of considerable scientific importance.

Reference to 'The Ibis' recalls the fact that Sharpe was elected a member of the British Ornithologists' Union in 1871, from which date to the time of his death he was one of the most active and energetic supporters of its objects, as well as one of the most frequent contributors to 'The Ibis.' The British Ornithologists' Club, to which only members of the Union are eligible, may be said to have been founded by Sharpe, for it was at his instigation and encouragement that they perceived the advantages that would arise from evening meetings, held once a month, for the discussion of subjects of general interest in the bird-world, and the exhibition of rare or little-known specimens from all parts of the globe, a record of the proceedings being subsequently printed in the 'Bulletin' of the Club.

Although Dr. Sharpe had not much leisure for foreign travel beyond an occasional trip to Paris or Berlin, or an autumn holiday in Norway, his official position once enabled him to undertake a notable journey to India for the purpose of superintending the package and transport of a valuable collection of birds and mammals which (on the condition of his taking charge of it) had been presented to the British Museum by Mr. A. O. Hume, of Simla. Accordingly Sharpe went out to arrange for its safe dispatch to London, a matter of no slight difficulty, seeing that it contained no less than 63,000 birds, 18,500 eggs, and 500 mammals. This incident recalls the fact that in several other instances the Nation has been indebted to Dr. Sharpe for most valuable collections presented to the Museum more or less through his instrumentality. To quote from his address as President of the Fourth International Ornithological Congress, held in London in June 1905, the following lines will shew how enormously the collections under his charge at the Museum were increased during his term of office: "It has been up to the present time (1905) impossible to prepare an exact estimate of the number of birds and eggs in the British Museum . . . At the lowest computation the specimens must number 400,000, and at the time when I assumed office in 1872 a liberal estimate of the collection of birds and eggs would be 35,000: it probably did not exceed 30,000."

The services thus rendered to science by Dr. Sharpe, in the care of and enormous increase to the collections under his charge, in the valuable Catalogue of Birds already referred to, besides a subsequent 'Hand-list of Birds' in five volumes, and in the numerous monographs and papers of importance which were independently published by him, are such as have never been achieved by one man in his lifetime, and in the opinion of his fellow workers, who are best qualified to express their views on the subject, some adequate recognition of such services by the Treasury on the recommendation of the Trustees of the British Museum should long ago have been bestowed on him.

It remains to add that Dr. Sharpe was an honorary LL.D. of the University of Aberdeen, a Fellow of the Linnean and Zoological Societies. a Member of the British Ornithologists' Union, and a recipient of the gold medal for Science, bestowed on him in 1891 by H.I.M. the Emperor of Austria. J. E. H.

XVI.—*Notices of recent Ornithological Publications.*

[Continued from p. 215.]

29. *'Annals of Scottish Natural History.'*

[The Annals of Scottish Natural History. A Quarterly Magazine, with which is incorporated 'The Scottish Naturalist.' Edinburgh: October 1909–January 1910.]

The October number contains the report on Scottish Ornithology for 1908 by Mr. J. Paterson, wherein he calls attention to a remarkable period of arrested migration of birds in April, followed by an inrush at the end of that month and in the early days of May. Fair Isle has again proved its excellence as an observatory, and furnished the second British example of the Subalpine Warbler, as well as what was supposed to be the first record for the kingdom of Eversmann's Willow-Warbler, while Savi's Warbler, the Icterine Warbler, the Alpine Accentor, and the Red-throated Pipit were new to Scotland. Careful observation at the Isle of May also resulted in the capture of a Scarlet Grosbeak, but this was a small matter compared with the occurrence of a new British bird on the same island on October 19th, 1909, as recorded by Misses Baxter and Rintoul in the January number. This was *Saxicola pleschanka* (= *S. morio*), of which a female of the white-throated form in autumnal plumage was secured and submitted to Mr. Eagle Clarke for inspection: it is now described, with a coloured plate. Further notes on the Isle of May are contributed by the two excellent observers already mentioned, who record at least ten male and female examples of the Yellow-browed Warbler, three Shore Larks, two Little Buntings, a Barred Warbler, a Scarlet Grosbeak, and a Red-breasted Flycatcher. They consider that they obtained very good results on the whole, though birds were somewhat scarce.

In both October and January Mr. Eagle Clarke contributes articles on the recent remarkable immigration of Crossbills to Britain, which are of much interest: in October we have a notice of Sabine's Gull from Shetland, in January records of two forms of Redpoll, the Northern Bullfinch and Tengmalm's Owl from the same islands, and also of two Yellow-browed Warblers from East Ross-shire, these being the first known to have occurred on the Scottish mainland.

30. '*Avicultural Magazine.*'

[Avicultural Magazine. Series iii. Vol. i. Nos. 1–4. November 1909–February 1910.]

This magazine continues to flourish under its new editor Mr. Frank Finn, and there seems to be no lack of contributors, most of them well known to its readers. Taking the more general articles in order, we have Mr. Seth Smith continuing his reminiscences of his trip to Australia with an account of the National Park in New South Wales, its Lyre-Birds, Satin Bower-Birds and other uncommon species. The Duchess of Bedford writes on the rare Cranes and other birds nesting at Woburn, and notes that Pekin Robins and some other species have bred in a wild state in the Park; Col. Momber discusses the morals of Birds, while Mr. Butler follows with an article on the same subject; and the former also contributes a pleasant paper on the birds of the Riviera.

As regards particular genera or species Mr. Astley discusses *Agapornis taranta* (col. pl.); Mr. Denman describes the displays of *Rhinochetus jubatus* (pl.) and different forms of Hangnests. Mr. C. B. Smith sends notes on the habits of *Strepsilas interpres* and *Arboricola*; Dr. Butler writes on the genus *Nymphicus*; Messrs. Silver and Scherren on the Dartford Warbler; and Mr. Newman on *Turtur decipiens.*

Of species bred in captivity we have *Chalcopsittacus ater*

(Mr. Brook), *Hyphantornis spilonotus* (Mr. Holden), *Ortygospiza polygona* (Mr. Phillipps), *Guiraca cyanea* and *Chera progne* (Mr. Teschemaker), and *Chrysotis bahamensis* (Mr. Bonhote); while Mr. Hopkinson gives an account of *Pœocephalus fuscicollis* both in captivity and in the wild state in West Africa.

Finally, Major Jones describes the "eclipse plumage" of the female of *Casarca variegata* of New Zealand, Mr. Astley writes on a cross between the Australian Crimson and Star Finches, and the Editor contributes further notes on Indian Birds, and on two of the *Anatidæ*.

31. *Dawson and Bowles on the Birds of Washington.*

[The Birds of Washington: a complete scientific and popular account of the 372 Species of Birds found in the State. By William Leon Dawson, A.M., B.D., of Seattle, assisted by John Hooper Bowles of Tacoma. Two Vols. 4to. Seattle: The Occidental Publishing Co., 1909.]

Two handsome quarto volumes, which have lately reached us, contain a well written and profusely illustrated account of the birds of the State of Washington. This is one of the Pacific States occupying a large area (more than twice the size of Ireland) in the extreme North-western corner of the Great Republic, and is of special interest to Englishmen, as being closely adjacent to British Columbia, which it borders on the south. In fact we suspect that the Avifauna of the State of Washington and of that part of the Dominion of Canada called "British Columbia" are nearly identical, and as, so far as we know, there is no special work on the birds of British Columbia, we ought to thank our American friends very much for preparing this excellent treatise on the birds of the adjoining and similar district.

The two volumes, as we have already said, are "profusely illustrated." More than three hundred "original half-tones" of birds and their nests, eggs, and favourite haunts, chiefly derived from photographs taken by the authors themselves or their friends, ornament these pages, besides many other drawings in the text and a series of coloured plates prepared by Mr. Allan Brooks. The last named are, in some cases, perhaps a little too gaudily coloured, but the numerous figures in the text are mostly excellent, and render the work quite a picture-book. The paper and print are likewise of first quality, and it is obvious that no pains or expense has been spared to make the book as complete as possible.

After a short preface Messrs. Dawson and Bowles pass on to the histories of the 372 birds which they recognise as belonging to the Avifauna of the State of Washington. They waste no space in synonyms, but unhesitatingly accept the nomenclature of the American Check-list. But we are glad to see that they do not follow its lead in commencing with the lowest forms of bird-life, but revert to the ordinary practice of beginning at the top of the tree and descending gradually to the bottom. Subspecies are liberally admitted, and in fact treated as of exactly the same rank as the well-marked species, though when it comes to distinguishing one Crow from another by its "clearer voice" we are apt to become a little sceptical as to any real subspecific difference.

Full details respecting the habits and customs of each species follow the technical descriptions, and the ranges in the State as well as the "General Ranges" are distinctly stated. But we regret that no map has been added to the work. Some ignorant people may happen not to know where the "State of Washington" is, and a map supplemented by a description of the physical features of this somewhat remote part of the Great Republic would give them valuable information.

32. *Ghigi on the Silver-Pheasants.*

[Richerche di sistematica sperimentale sul genere *Gennæus* Wagler. Memoria del Prof. Alessandro Ghigi. Mem. R. Accad. Sc. Bologna, Ser. 6, Tom. vi. Bologna, 1909.]

This memoir treats of the Pheasants of the genus *Gennæus* of Wagler—one of the five genera into which the old genus *Euplocamus* has been divided. Mr. Ogilvie-Grant in the 'Catalogue of Birds' recognised eight species of this group, which Prof. Ghigi now increases to twenty-six (!) based principally on additions recently made by Mr. Oates*. We may venture to express our doubts whether these species, some of which are based upon very slight characters, are really tenable.

Prof. Ghigi adds chapters on supposed hybrids between the different species, which appear to breed together without any difficulty, and on the distribution of these Pheasants in China, Burma, and Siam, illustrating his essay by an outline map (p. 32).

33. *Grinnell on a new Cow-bird.*

[A new Cow-bird of the genus *Molothrus*, with a Note on the probable relationships of the North American forms. By Joseph Grinnell. University of California Publ. in Zool., viii. p. 275.]

Mr. Grinnell separates, under the name *Molothrus ater artemisiæ*, the form of *Molothrus* found in the "Upper Sonoran and Transition zones of the Great Basin Region of the Western United States" from *M. ater* of the Eastern States, as being somewhat larger and having "a proportionally longer and more slender bill, similar to that of *M. a. obscurus*." Outline drawings are given of the bills of the three subspecies.

34. *Hartert on new African Birds.*

[On some recently discovered African Birds. By Ernst Hartert, Ph.D. Nov. Zool. xvi. p. 333 (1909).]

Africa has not yet ceased to produce marvels, at least in Bird-life, and these marvels not unfrequently find their way to Tring, where there are Ornithologists ready to describe them. Dr. Hartert now gives us further information about *Xenocopsychus ansorgei* (from Mossamedes), *Graueria vittata* (from Baraka in Congoland north-west of L. Tanganyika), *Diaphorophyia graueri* (from the forests west of Lake Albert-Edward), and *Lioptilus rufo-cinctus* (from the forest south-east of Lake Kivu), all of which are figured by Keulemans after having been previously characterized in the Bull. B. O. C. He also records the receipt of additional examples of *Laniarius graueri* and *L. rubiginosus rudolphi.*

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* See below, p. 367.

35. *Hartert and Venturi on Argentine Birds.*

[Notes sur les Oiseaux de la République Argentine. Par E. Hartert et S. Venturi. Nov. Zool. xvi. p. 160 (1909).]

The collection made by M. Venturi, of Buenos Ayres, in various parts of the Argentine Republic, and acquired by the Tring Museum, contains 1115 bird-skins and several thousand eggs. The species have been determined by Mr. Hartert, while M. Venturi has supplied abundant field-notes. The authors have not attempted to make a complete list of Argentine birds, but treat only of the specimens in M. Venturi's collection and in seven other Argentine collections in the Tring Museum. Nevertheless there cannot be very many species omitted, because 509 species and subspecies are enumerated, and Sclater and Hudson's 'Argentine Onithology' contains only 434 species. The series of interesting field-notes by M. Venturi have been translated from the original Spanish into French, while Dr. Hartert supplies the scientific remarks. The following species and subspecies are described as new:—*Cistothorus platensis tucumanus, Anthus hellmayri, Phrygilus alaudinus venturii, Leptasthenura ægithaloides berlepschi, Siptornis steinbachi, Picumnus cirrhatus tucumanus, Merganetta berlepschi, Columba picazuro boliviana*, and *Nothura salvadorii.*

Seventy excellent figures of eggs on two plates accompany the text. The field-notes on the parasitic Cow-birds (*Molothrus*, p. 184) are of special interest.

36. *Howard's 'British Warblers.'*

[The British Warblers: A History with Problems of their Lives. By H. Eliot Howard. Part 4. London: R. H. Porter, 1909.]

The fourth part of Mr. Howard's excellent monograph of the British Warblers now lies before us, and we are once more struck by the exceptional beauty of the plates and the thorough treatment of the habits of the species. How thorough this is may be judged from the fact that the letterpress deals with but four species and that the Whitethroat alone occupies twenty-three pages, the Lesser Whitethroat twenty. Of the Siberian Chiffchaff (*Phylloscopus tristis*) and the Greenish Willow-Warbler (*P. viridanus*), which do not breed in Britain, only the description and distribution are given, in accordance with the scheme of the work. Among the many points of interest may be mentioned the account of the difference in the songs of various species in different localities, the behaviour of the Lesser Whitethroat when its young are in danger, and several curious habits of the Common Whitethroat, such as the building of extra and useless nests, the habit of removing or even swallowing small leaves dropped into the structure, and so forth ; but it will be evident that these do not represent a tithe of the total information. Coloured plates are given of all the species, and plain plates in the case of the two first-named, to exhibit particular attitudes ; but the plate of eggs which is the frontispiece to this Part is perhaps most striking of all, and gives figures of a well chosen series with admirable fidelity.

37. *Migration-Report of the B. O. C.*

[Report on the Immigrations of Summer Residents in the Spring of 1908; also Notes on the migratory movements and Records received from light-houses and light-vessels during the autumn of 1907. By the Committee appointed by the British Ornithologists' Club. Bull. B. O. C. vol. xxiv. Nov. 1909; 235 pp.]

The third Report of the Committee of the B. O. C. on Migration has increased in size to a volume of 235 pages. Besides the ordinary reports on the scheduled species in the Spring of 1908, each of which is illustrated by a map, notes are given on the migratory movements observed during the previous autumn. Some of these are of considerable interest, for example those of the Blackbird (*Turdus merula*), which is usually considered a very stay-at-home species.

Yet we learn that in the autumn of 1907 migratory flocks of this bird were noted at many of the light-houses on the east coast, and at St. Catherine's, I. of W. It may be presumed, however, that these were all strangers from the far north, and not deserters from our English gardens, where they seem to be as numerous in winter as in summer.

The list of Light-houses and Light-vessels on which observations were made should have been accompanied by a map, as is always the case in the Danish Report. The exact situation of many of them is unknown (except, perhaps, to special students of migration), and to the names of the meritorious Observers their addresses, surely, should be added, unless the Observers object.

With these slight exceptions we fully approve of the third report of our Migration Committee and thank them for their good work.

38. *Nicholson on the Distribution of* Macronyx.

[The Geographical Distribution of Birds. I. Genus *Macronyx* Swainson. By Francis Nicholson, F.Z.S., M.B.O.U. Manch. Mem. Lit. Phil. Soc. 53. 1909, No. 24.]

This is the first of a proposed series of papers on the distribution of Pipits and Wagtails, which the author has studied for several years. Of the purely Ethiopian genus *Macronyx* 9 species are allowed, while their exact distribution, so far as it is yet known, is set forth and further elucidated by two coloured plates. The most widely spread species is *M. croceus,* which is found in West, East and South Africa, but others are confined to quite limited localities.

39. *Nicoll's 'Three Voyages of a Naturalist.'*

[Three Voyages of a Naturalist, being an Account of many little-known Islands in Three Oceans visited by the 'Valhalla' R.Y.S. By M. J. Nicoll, M.B.O.U. With an Introduction by the Rt. Hon. the Earl of Crawford, K.T., F.R.S. Second Edition: Witherby & Co., 1909. (7/6 net).]

We are much pleased to receive a copy of a second edition of Mr. Nicoll's well illustrated and instructive work, which has already been described in our notice of the first edition

(Ibis, 1908, p. 533) but well deserves further mention. Mr. Nicoll had great, in fact almost unequalled opportunities, no doubt, but he did not fail to make good use of them. In the new edition a few corrections have been made, and special attention is called to the remarks about Easter Island in the first edition. It appears that the "mystery of the Pacific" had inhabitants on it when first discovered, but of what race they were is a question not likely to be solved. There is one Land-bird to be found there, probably of a new species, but it would be a long way to go for it—some 2300 miles from the coast of Chili!

We hope that Mr. Nicoll's second edition will soon be exhausted and a third edition called for.

40. *Nicoll on Birds observed in the Giza Zoological Gardens.*

[Additions to the List of Wild Birds which have visited the Giza Zoological Gardens. By Michael J. Nicoll, F.Z.S., M.B.O.U. (Reprinted from the Cairo Scientific Journal, No. 37, Vol. iii., October 1909.)]

In a former paper (*cf.* 'Ibis,' 1909, p. 543) Messrs. Flower and Nicoll gave us a List of the wild birds that had been obtained or observed in the Zoological Gardens at Giza near Cairo during the past ten years—156 species in all—a wonderful number for so small and frequented an area. Mr. Nicoll now records the visits of 16 more species to this much favoured locality, among which we find the name of the Ortolan (*Emberiza hortulana*), the Wood Sandpiper (*Totanus glareola*), and the Senegal Thick-knee (*Œdicnemus senegalensis*). According to the writer's views there are two Hoopoes in Egypt. Besides the common form (*Upupa epops typica*), which passes through on migration, there is another form (*Upupa epops major*) resident in Lower Egypt, which is distinguished by its larger size and longer bill.

To his list of new additions Mr. Nicoll appends some notes and corrections on species included in the original list. Amongst these are remarks on *Sylvia subalpina albo-striata* and *Prinia gracilis striata*, two newly resuscitated subspecies.

41. *North on the Nests and Eggs of Australian Birds.*

[Nests and Eggs of Birds found breeding in Australia and Tasmania. By Alfred J. North, C.M.Z.S. Vol. ii. Part 3. Sydney, 1909.]

With much pleasure we record the issue of another Part of Mr. North's meritorious work on the nests and eggs of Australian Birds, which is continued in the same style as the preceding Parts*, and concludes the second volume. It contains an account of the remaining families of the Passeres, and of the first portion of the Picarians. As in the former Parts a description of every species is given, besides ample details concerning the nesting and eggs, while numerous good photographic illustrations are introduced in the text. The eggs of many little-known birds are figured in the plates, including those of all the three known species of Lyre-bird (*Menura*).

42. *Oates on new Burmese Pheasants.*

[On some new species of Silver-Pheasants. By E. W. Oates. Ann. Nat. Hist. ser. 8, vol. v. p. 162 (1910).]

Mr. Oates describes three "new species" of Silver-Pheasants from various districts of Burma—*Gennæus atlagi*, *G. haringtoni*, and *G. granti*. Mr. Oates should consult Prof. Ghigi's paper on the same subject (see above).

43. *Report of the South African Locust-Bureau.*

[Third Annual Report of the South African Central Locust Bureau. Edited by Chas. P. Lownsbury, Govt. Entomologist to the Cape of Good Hope. 8vo. Cape Town, 1909. 68 pp.]

As in other arid and semi-arid districts of the world, so in South Africa the "plague of locusts" is a source of constant injury and loss to the agriculturist. In order to coordinate the work of combating this plague and to secure common action in the agencies and methods employed, the various Governments of South Africa (not only those of the British Colonies but also those of German South-West Africa and

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* See 'Ibis,' 1908, p. 189, and 1907, p. 359.

Mozambique) have combined to form a common Bureau with head-quarters at Pretoria, and this is their third Annual Report.

Various means have been employed for the purpose of destroying the swarms of these terrible insects but, so far as one can judge from the Report, the most efficacious agencies for this purpose are locust-eating birds.

The leading Locust-birds are undoubtedly the White Stork (*Ciconia alba*) and the Pratincole (*Glareola melanoptera*), which are generally known in South Africa as the Greater and the Smaller Locust-bird.

Other birds which devour large numbers of Locusts are the Kestrels (*Tinnunculus naumanni*, *T. rupicola*, and *T. rupicoloides*) and the Kite (*Milvus ægyptius*), while the White-bellied Stork (*Abdimia abdimii*), though a somewhat rare species, ranks very high in favour.

Starlings of all kinds, especially the Wattled Starling (*Dilophus carunculatus* *), Guinea Fowls, and Francolins assist in the work of destruction.

The reports of the Committee urge the importance of the most careful protection by law of all the Locust-eating birds throughout South Africa, and insist that the laws on this subject, when enacted, should be strictly enforced.

44. *Sharpe's Hand-list of Birds*, Vol. V.

[A Hand-list of the Genera and Species of Birds. (Nomenclator Avium tum fossilium tum viventium.) By R. Bowdler Sharpe, LL.D., Assistant Keeper, Department of Zoology, British Museum. Volume V. London, 1909.]

In January 1904, we wrote a notice of the fourth volume of Sharpe's 'Hand-list.' Most fortunately for the progress of our Science, Sharpe lived to complete this important work by the issue of the fifth and last volume, which is now before us. The Hand-list was planned and commenced in 1898, and the first volume published in 1899, so that it has occupied ten years of hard labour, having been composed and written amid the pressure of other official work in the author's "private time."

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* See Sclater & Stark, B. S. Afr. i. p. 24.

In his preface to the present volume Sharpe makes the following out-spoken statement of his views on the new system of "trinomials," which deserves attention, even if it may be not quite agreeable to the new school of Systematists.

"Some exception has been taken to my recognition as species of all the forms described as subspecies or races with trinomial names. My views on this subject have often been stated, and as for trinomials I look upon the system as destructive. I consider that the burden imposed upon Zoologists who follow this method for the naming of their specimens will become too heavy, and that the system will fall by its own weight. That races or subspecies of birds exist in nature no one can deny, but, to my mind, a binomial title answers every purpose."

In the preface to the fifth volume of Sharpe's 'Hand-list' the total number of the known species of Birds is calculated as 18,939, and the genera as 2,810. In 1871 when George Robert Gray finished his 'Hand-list' he admitted 2,915 genera and 11,162 species.

Having begun with the lowest birds—an arrangement which we by no means approve of—Sharpe has placed what he considered to be the most highly organized birds in his last volume. The series of Acromyodians, to which it is devoted, is concluded by the Corvidæ and their allies; these, following Newton and Parker, Sharpe considered to be the most highly developed of the Class of Birds, though the reasons for assigning to them this high position have never been very clearly explained.

In concluding this short notice of one of the most important works in our branch of Zoological Science that has lately appeared, we need hardly enlarge on its value to the systematic worker who wants to find his references easily. There is an Index to every volume except the first. But there ought also to be a General Index to all the five volumes.

This would render the work much more generally useful, especially as the present indexes are not always quite reliable. A critical correspondent has favoured us with a list of 34 generic names which are used in one or more of the 27 volumes of the British Museum 'Catalogue of Birds,' but are *not* to be found in any of the Indexes of the 'Hand-list.' As it may be useful to some workers we subjoin the list.

List of Generic Names quoted in the 'Catalogue of Birds in the British Museum,' *but not mentioned in the Indexes to the 'Hand-list.'*

Aptornis, Arinia, Atrichia, Cassicus, Certhiola, Cerorhyncha, Chauna, Chirocylla, Chloris, Cichlopsis, Cymodroma, Dissura, Doleromyia, Eucorystes, Klais, Lepidolarynx, Melanobucco, Microglossus, Monacha, Myiodioctes, Nyroca, Ortyx, Oxyrhamphus, Palamedea, Perissoglossa, Phonipara, Picathartes, Pinarolæma, Procnopis, Pteroclurus, Scotornis, Sphenoproctus, Stellula, Trichostoma.

We may also remark that it would have been much better to have put the Family Names in the running titles of the volumes instead of the useless repetition of "Genera and Species of Birds" throughout.

45. *Van Oort on the* Gerygone *and* Eurylæmus *of Java.*

[Note XIII. On *Gerygone* and *Eurylaimus* Species from Java and Sumatra. By Dr. E. D. Van Oort. Notes Leyd. Mus. xxxi. p. 207.]

The examination of recently received specimens from Java has convinced Dr. Van Oort that the *Gerygone* and *Eurylæmus* of that island shew slight differences from their representatives in other parts of the Eastern Archipelago. He therefore proposes to separate the Javan form of the first species under the name *Gerygone modigliani jacobsoni* and to restrict the name *Eurylæmus javanicus* to the Javan form of the second species, calling the form from Sumatra, Banka, Biliton, Borneo, and Malacca *Eurylæmus javanicus harterti.*

46. *Van Oort on Birds from the Netherlands.*

[Note XIV. Report on Birds from the Netherlands received from 1st September 1908 till 1st September 1909. By Dr. E. D. Van Oort. Tom. cit. p. 211.]

Dr. Van Oort is engaged in the praiseworthy task of forming a collection of the birds of Holland for the Leyden Museum. In this memoir he reports a year's progress, during which he has acquired 675 skins. Among these there are examples of two species new to the Collection—*Megalestris skua* and *Serinus serinus*. Fourteen other important species are stated to have received additional representatives.

47. *Van Oort on a new Parrot.*

[Note VI. On a new form of the Genus *Psephotus*. By Dr. E. D. Van Oort. Op. cit. xxxii. p. 71.]

A "subspecies" of *Psephotus chrysopterygius*, described as *P. c. blaauwi*, is based on a specimen received from Mr. Blaauw, who has other living examples of the same form in his Aviaries. They are believed to have come from Port Darwin, North Australia.

48. *Van Oort on Birds from Southern and South-western New Guinea.*

[Nova Guinea. Résultats de l'Expédition scientifique Néerlandaise à la Nouvelle-Guinée. Vol. ix. Zoologie, Livr. i. Dr. E. D. Van Oort. Birds from South-western and Southern New Guinea. Leiden: Brill, 1909.]

This interesting memoir gives us an account of the collection of birds recently made by Mr. Koch and Dr. H. A. Lorentz on the coast of southern and south-western New Guinea. In 1907, Dr. Lorentz obtained a good series of about 480 skins, principally at various stations on the Noord River, which was ascended to a height of more than 2,500 metres. He also visited Merauke, near the southernmost point of Dutch New Guinea. Both these localities are shown in Stanford's map of New Guinea (Compendium of

Geography, Australasia, ii. p. 376) and an outline sketch of the North River is given in Dr. Van Oort's article.

Altogether about 170 species are enumerated in the present memoir, and the dates and localities of every specimen are exactly set forth, with critical notes when required. The greater number of the birds are old friends, but two species and six subspecies are described as new—namely, *Clytoceyx rex imperator*, *Arses telescophthalmus harterti*, *Sericornis arfakiana nouhuysi*, *Malurus lorentzi*, *Pitohui* (ser. *Rhectes*) *aruensis nigropectus*, *Pitohui incertus*, *Ptilotis erythropleura lorenzi*, and *Entomyza cyanotis griseigularis*. The prizes of the collection are two adult males of *Xanthomelus ardens*, of which only the imperfect typical specimen, now at Genoa, was previously known. This gorgeous bird is now well figured (Plate iii, p. 100). A text-figure (p. 105) represents the extremely remarkable convolutions of the trachea in *Manucodia atra* and *Phonygama keraudreni*.

49. *Woosnam's Itinerary of the Ruwenzori Expedition.*

[Zoological Results of the Ruwenzori Expedition, 1905-1906. Itinerary. By R. B. Woosnam. Trans. Zool. Soc. London, Vol. xix. Part i. 20 pp. 4to.]

The Zoological Society of London, always in the front when good scientific work is to be done, has, as has been already announced, undertaken the publication of the zoological results of the Ruwenzori Expedition of 1905–1906, and has appropriated the nineteenth volume of their quarto Transactions to this purpose. In accordance with the traditions of the Society there can be no doubt that this task will be thoroughly well performed, nor will there be any delay in its execution, as the first Part of the work is now before us.

After a short preface by Mr. W. R. Ogilvie-Grant, who, as we all know, was not only the originator and organizer of this successful enterprise, but also raised, among his many friends, the funds required for its accomplishment, we find an excellent and well-written "Itinerary" of the

Expedition, prepared by its leader, Mr. R. B. Woosnam. As this Itinerary contains some good general remarks on the birds of Ruwenzori, we may fairly claim it as an ornithological publication which deserves notice in 'The Ibis,' although the special memoir on the birds collected during the expedition (prepared by Mr. Ogilvie-Grant) has not yet been issued.

We need not on the present occasion follow Mr. Woosnam in his narrative of the journey to Ruwenzori, nor is it necessary to refer to his excellent disquisitions on the Clouds, Glaciers, Rainfall and other physical features of this remarkable elevated ridge between Lake Albert and Lake Edward. But we wish to call the reader's attention to the author's division of Ruwenzori into six zones, characterized mainly by the leading features of their vegetation, and to his lists of the principal forms of bird-life met with in each zone. The zones are named : (1) The 'Grass-zone' (3,000 to 6,500 ft.) : (2) The 'Forest-zone' (6,500 to 8,500 ft.), in both of which animal life is abundant : (3) The 'Bamboo-zone,' where the impenetrable jungle renders it less numerous, but which is the abode of Johnston's Touraco (*Gallirex johnstoni*) : (4) The Tree-heath and Moss-zone, the home of the Alpine Flycatcher (*Cryptolopha alpina*) and Stuhlmann's Sun-bird (*Cinnyris stuhlmanni*), which is entirely confined to a belt between 10,000 and 11,000 ft.: (5) The *Senecio*- and *Lobelia*-zone (12,500 to 14,500 ft.), in which seven Birds are named as indigenous. Amongst these the gorgeous and absolutely peculiar Sunbird *Nectarinia dartmouthi* is extremely plentiful.

In the Snow-zone (above 14,500 ft.) no Mammals or Birds are met with. No Palæarctic forms of Bird-life are found on Ruwenzori, but there are many Alpine genera of Plants.

Full details about the Bird-life on Ruwenzori will, no doubt, be given in Mr. Ogilvie-Grant's memoir on the birds collected during the Expedition, to the appearance of which we look forward with great interest.

XVII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors of 'The Ibis'":—

Sirs,—I thank you for your kind inquiries in regard to our new Californian Museum. The following information in regard to it you are welcome to use as you please.

About two years ago Miss Annie M. Alexander, of Oakland, agreed to give $7,000 yearly for seven years to equip and maintain a "Museum of Vertebrate Zoology," on condition that the Regents of the University should provide a suitable building. The plans for the building as finally determined upon, with its equipment, called for about $14,000.

The building, now completed, stands north of California Field and adjoins on the east the new Fertilizer Control Laboratory. Externally it is a rectangular structure one hundred and five feet long by fifty feet wide, covered with corrugated galvanized iron. Within, the southern portion of the ground floor has been built as an exhibition hall, fifty feet by seventy-five feet, open to a skylight in the roof above, with a gallery on all sides twelve feet in width at the second floor level. In this hall will be mounted a number of groups of large Californian mammals, arranged in semblance to their natural surroundings, with backgrounds painted by Carlos Hittell, the San Francisco artist. The groups are now being made by Mr. John Rowley, formerly taxidermist of the American Museum of Natural History in New York, employed here for this purpose by the managers of the Alexander fund. The groups when completed will stand behind plate glass under the light, so that visitors will see them from beneath the gallery. In this way the best possible advantage will be taken of the lighting effects, as there will be no reflection from the glass of the cases.

In the gallery, on the second floor, are to be arranged the storage-cases of research-collections, and perhaps later on a few small groups for exhibition. The storage-cases are airtight zinc-lined cabinets of sliding trays in which dry specimens can be kept safe from moisture and from insect pests, and can be fumigated when necessary. These rows of cases, known as "zincs," are a characteristic feature of the new museum's equipment, there being already thirty-seven of them in use.

The research-room faces the north and east. Wide tables are built along the north end of the room under the windows, to hold trays taken from the storage-cases for purposes of study. On the other side of the building, facing north and west, is the library and study, which is also the office of the Director and of the Curators. The book-shelves in this room contain a number of necessary reference books and the bound files of collectors' field-notes. There is also a map-rack for records of research in distribution of species and its causes.

The collections in the museum contain notably a large series of bears, including skins, skulls, and complete skeletons, chiefly from Alaska, gathered from various sources by Miss Alexander and donated to the museum. There is also a complete representation of the two Californian species of sea-lions, about twelve specimens of each, and an example of the Alaskan moose, which, as regards size, is among the record specimens of a species normally much larger than that found in Maine and the British provinces.

Of birds over twelve thousand specimens belonging to the museum have already been catalogued. Of small mammals over nine thousand have been catalogued. There are about two thousand reptiles and batrachians catalogued. In addition to the specimens which are the property of the museum, there are several private collections on deposit, notably the Grinnell collection of eight thousand birds, and the Swarth and Morcom bird-collections, of about four thousand specimens each. The University's collections are chiefly the result of Miss Alexander's expeditions; only about 1300 specimens belonged to the University previously.

The activities of the Museum staff have been largely devoted to the direction of collecting expeditions. In 1907 and 1908 Miss Alexander personally conducted expeditions to Alaska. The results of the expedition of 1907 have recently been published in the series of University of California Publications in Zoology. During the summers of 1908 and 1909 five collectors were at work in different fields under the direction of Mr. Grinnell.

The museum aims at becoming the centre for the systematic study of the birds, mammals, and reptiles of the Pacific Coast. The Collections of the Biological Survey in Washington are vastly larger, even with regard to Pacific Coast forms, but of course are not available for study in this part of the country.

The staff of the museum consists of Mr. Joseph Grinnell, formerly of the Throop Polytechnic Institute of Pasadena, Director; Mr. Harry S. Swarth, curator of birds; and Mr. W. P. Taylor, assistant curator of mammals. Mr. Edmund Heller, appointed curator of mammals, is at present on an indefinite leave of absence, with the Smithsonian Institution's expedition to Africa under Colonel Roosevelt.

I am, Sirs, yours &c.,
JOSEPH GRINNELL.

Berkeley, California,
December 17th, 1909.

SIRS,—I wish to congratulate you on Dr. Sclater's article ('Ibis,' 1909, p. 347) on the practice of attaching "authorities" to the scientific names of animals. This practice has for many years seemed to me an absurd contradiction to the principle of Binomial Nomenclature. If it be once admitted as necessary there can be no reason for changing a specific name when it has been already used for another species of the same genus. If it be once granted that a species should be called "*rufus* Smith" and not simply "*rufus*," there can be no reason for changing a specific name when it has already been used for another species of the same genus. The different "authority" would be sufficient to distinguish them.

All the efforts to eliminate double names in the same genus have no reason unless your contention be accepted.

I only regret that you have not given your protest to zoologists at large instead of confiding it to the readers of an ornithological periodical.

I am, Sirs, yours &c.,
N. H. FIELD.

Concilium Bibliographicum,
Zurich, 28.i.10.

The B.O.U. Expedition for the Exploration of Central New Guinea.—In our last number (above, p. 223) we expressed a hope that the B.O.U. Expedition under the leadership of Mr. Walter Goodfellow would be able to land on the south coast of New Guinea and commence work early in January last. We are now able to state that the party left Dobbo on January the 3rd, in the Dutch steamer 'Nias,' and reached the mouth of the Mimika River two days later. A base-camp was established on the 5th near a village called Wakatimi, about 12 miles up the river, and the stores were disembarked. The natives were very numerous but quite friendly. On January the 9th Mr. Stalker, who had gone into the bush unattended, was reported as missing. We very much regret to say that further intelligence has arrived that after several days of anxious search his dead body was found in the river, but no details have been received as to how it got there.

The news was received by telegram from Batavia on February 1, and had probably been forwarded by steamer from the Aru Islands. With this telegram Mr. Ogilvie-Grant received a long letter from Mr. Stalker, written from "Amboina, December 24, 1909." In this he stated that he had been successful in engaging the services of 150 carriers, and was expecting the arrival of Mr. Walter Goodfellow, the leader of the expedition, in a few days. He also mentioned the dispatch of various cases containing collections of mammals and birds, &c., which have been procured in Central Ceram, and are likely to prove of great interest.

Mr. Stalker left England about a year ago, and proceeded to the Aru Islands to obtain living examples of Birds-of-Paradise for Sir William Ingram. It had been arranged that, after completing this engagement, he should join the other members of the British Ornithologists' Union Expedition, filling up his time until their arrival by collecting natural-history specimens and by making the preliminary arrangements for transport in New Guinea. His letter, mentioned above, states how usefully he had employed his time in carrying out his instructions. Mr. Stalker had already had considerable experience of life in New Guinea, having spent several years (between 1901–6) at the gold mines on the Mambare River, in the northern part of the British territory. It was then that he first began to collect specimens for the Natural History Museum. Subsequently, at the suggestion of Mr. Oldfield Thomas, who had discovered his great ability in trapping and preparing mammals, he was sent by Sir William Ingram and Mr. Forest to Alexandra, in the northern territory of South Australia, and in 1907 to Inkerman, in East Queensland. In both these places he did admirable work, and formed fine collections of mammals, which were presented by his patrons to the Natural History Museum. In 1909, in company with Mr. C. R. Horsbrugh, he again visited British New Guinea and the Aru Islands on behalf of Sir William Ingram, and was successful in bringing back a large number of living Birds-of-Paradise, including a male of the beautiful Blue Bird-of-Paradise (*Paradisornis rudolphi*), which had not previously been brought to Europe alive. Early in 1909, after a short stay in England, he again started on the present undertaking, when he so unfortunately lost his life. Mr. Stalker was quite a young man—only thirty-one years of age—having been born on January 17, 1879, and it is sad to think that the successful career of this talented naturalist should have been terminated so early and in so tragic a manner.

Lorentz's New Guinea Expedition.—We learn from 'Nature' of February 17 (vol. 82, p. 464) that a telegram has been received from Mr. H. A. Lorentz, stating that his expedition into Central New Guinea from the South Coast has been successful. Mr. Lorentz's party reached the snow-capped range which had previously only been dimly perceived from a distance. He has climbed up to these Alpine regions, and has discovered glaciers at an altitude of 15,000 feet. We shall, no doubt, soon receive further particulars. Mr. Lorentz's route was, we believe, up the North River, as on his former Expeditions.

New Ornithological Expedition to Mongolia.—Mr. Douglas Carruthers has organized a new expedition in which, in conjunction with his friends Mr. J. H. Miller and Mr. M. P. Price, he will traverse North-Western Mongolia, and make a collection of its birds and other natural objects. The programme is to take the Siberian Railway as far as Krasnoyarsk, and thence go by steamer up the Yenesei to the Russian settlement of Minusinsk. At this place the expedition will be fitted out, and proceed southwards over the frontier into Chinese territory. The early spring and summer will be devoted to working the upper sources of the Yenesei River for zoological and botanical purposes. This region is chiefly mountainous and heavily forested.

From Kobdo, which is situated to the south-west of the basin of the Upper Yenesei, a zigzag journey will be made through Dzungaria to Kuldja in the neighbourhood of the Tian-shan Mountains. This route will lead over many successive self-contained basins, with alternate desert and mountain-ranges. After this, plans will be dependent upon time and circumstances, but Mr. Carruthers hopes to turn south-eastwards, and, after wintering in the Tarim basin, to push on in the spring into the Chinese provinces of Kansu and Alashan. Mr. Miller and Mr. Carruthers will divide the labours of collecting animals, while Mr. Price will undertake the botany and forestry. The expedition, which has just started, will probably be away about a year or fifteen months.

A new Gigantic Fossil Bird.—We learn from the last number of 'The Condor,' vol. xii. p. 52, that a new gigantic fossil bird has been discovered in the asphalt-beds near Los Angeles, and described by Mr. Love Holmes Miller. The species is new, as well as the genus, and has been named *Teratornis merriami*, in honour of Professor John C. Merriam of the University of California, through whose efforts the fossil-beds of Rancho la Brea have been brought to the attention of palæontologists.

The description is based on coracoids, sternum, and a nearly complete skull. The fragments so far secured represent at least four individuals. The bird is probably related to the American Vultures (Cathartidæ), and was of enormous size, much greater than that of any existing flying bird. Since the limb-bones and feet are still unknown, final conclusions as to its relationship must be postponed; but it appears probable that a new family will have to be established for it.

In the same beds are found remains of some extinct Mammals (*Smilodon* and *Paramylodon*) of Pleistocene Age.

The Bangs Collection of American Birds.—As we learn from the 'Museums Journal' (vol. ix. p. 328), the private collection of birds belonging to Messrs. E. A. and O. Bangs, containing approximately 24,000 skins, has been acquired by the Museum of Comparative Zoology, Harvard College. The specimens are mostly from North and Central America and the northern part of South America, and comprise the types of the many new species and subspecies recently described by Mr. O. Bangs, whose numerous memoirs have been frequently noticed in this Journal of late years. We congratulate the authorities of the Museum of Comparative Zoology on having obtained such a valuable addition to their Bird-collection.

The Rhodesia Museum, Buluwayo.—We are much pleased to hear that the Directors of the British South Africa Company have granted a piece of land at Buluwayo for the site of a new museum, and that the Beit Trustees have given £2,500 towards the erection of the buildings. There is, we believe, a good local collection of birds already in existence, and we are sure that Mr. E. C. Chubb, the Assistant-Curator, will lose no opportunity of adding to it. He has already sent us an article on the birds of the surrounding district (see 'Ibis,' 1909, p. 140), and will, no doubt, favour us with further communications, when convenient.

A Present to the B. O. U.—At the Ninth Annual Session of the Australasian Ornithologists' Union, held at Adelaide on September 30th, 1909, it was proposed by Mr. A. J. Campbell, seconded by Mr. Charles Barrett, and resolved, that copies of the cinematograph-films depicting the bird-life of the expedition of the A. O. U. to the islands of Bass' Straits in 1908 be sent to England as a present to the British Ornithologists' Union. It is hoped that they may arrive in time to be exhibited at the joint meeting of the B. O. U. and B. O. C. on May 25th.

The Destruction of Birds in the Riviera.—In the last number of the 'Avicultural Magazine' (ser. 3, vol. i. p. 125), Lt.-Col. Momber writes as follows on the treatment of birds in the Riviera:—

"The excessively ornithophagous proclivities of the Southerners are a heavy set-back to the advantages lavished by nature on the Riviera. Every one shoots, nothing is spared, and the corpses of the daintiest songsters—Goldfinches, Siskins, Robins, Warblers—hang in bunches in the town markets.

"In Italy, the protective laws are still embryonic and seldom enforced; offenders are leniently dealt with, and illegal practices prevail. In general, wholesale methods of bird-catching are prohibited in Liguria; it is mainly in the provinces of Como and Piedmont that the gardens of death flourish, the terrible roccolo and passata. But the popular amusement of besetting with bird-limed grapes the streams in dry weather is indulged in despite the law, and is singularly destructive and wasteful, for all the birds of the district get limed and many are not even bagged, but flutter away to die a lingering death.

"If proof were needed of the deep-rooted passion for bird-hunting of the Italians, it could be found in the fact that in U.S.A. the Audubon Societies find it necessary to disseminate leaflets among the Italian immigrants, printed in their tongue, exhorting them to respect the laws and customs of their new country, and to refrain from destroying that which is beautiful as well as profitable.

"These habits are less surprising in a newly united kingdom such as Italy, still tinged with mediævalism and the traditions of many formerly separate small States, than in France. For France signed the International Convention of 1902, and thus is accredited with the perspicacity and æsthetic development which are inseparable from an intelligent and humane protection of natural objects. But, after giving itself the sound and sufficient laws of the Convention, as now in force in Germany, Switzerland, Austria, and Hungary, and after appointing a day for these enactments to take effect, the French Chamber, by a large majority in November 1906, passed an 'indulgence decree' suspending *sine die* the application of the laws, and upholding the old order of things. This means an annual issue by Prefects of Departments of regulations relating to game and birds, and the old systematic war of extermination carried on indefinitely. It is a poignantly ridiculous condition of affairs, until one remembers the political corruption and favouritism that lie at its root, and the steady diminution of bird-life it causes. Then it becomes deplorable."

Hungarian ringed Storks in South Africa. (Marked in Hungary by means of numbered aluminium rings.)

1. Marked on July 10, 1908, ring no. 209, at *Hidvég*, 45° 50′ N. Lt., 43° 15′ E. Lg. Killed on January 30, 1909, at *Seaforth*, Himeville, District Polela, Natal, about 30° 0′ S. Lt., 48° 0′ E. Lg. Distance about 8600 kms. Reported by Mr. PETER MACKENZIE in 'Times' issue of March 3, 1909.

2. Marked on June 26, 1909, ring no. 1415, at *Bogyán*, 45° 25′ N. Lt., 36° 45′ E. Lg. Killed on November 22, 1909, at *Lake Banagher*, Ermelo district, Transvaal, about 26° 30′ S. Lt., 48° 0′ E. Lg. Distance about 8100 kms. Reported by Mr. E. Pearce in East London Daily Dispatch, December 1, 1909, and Mr. H. Meyer in De Volkstem of December 6, 1909.

3. Marked on June 26, 1909, ring no. 1432, also at *Bogyán*. Killed on November 28, 1909, at *Glencoe Junction*, Natal, about 28° 20′ S. Lt., 48° 0′ E. Lg. Distance about 8300 kms. Reported by Mr. George E. Matthews.

4. Marked on July 5, 1909, ring no. 2054, at *Rakamaz*, 48° 10′ N. Lt., 39° 10′ E. Lg. Killed on December 14, 1909, at *Lehloenyas*, Morija, Basutoland, about 29° 40′ S. Lt., 45° 30′ E. Lg. Distance about 8750 kms. Reported by Mr. Miles Capstiek, Jr.

5. Marked on July 13, 1909, ring no. 2298, at *Réty*, 45° 50′ N. Lt., 43° 40′ E. Lg. Killed on December 1909 at *Senekal*, Orange River Colony, about 28° 20′ S. Lt., 27° 30′ E. Lg. Distance about 8500 kms. Reported by Mr. P. Stahl.

Issued at the Royal Hungarian Central Bureau for Ornithology, Budapest, Hungary, on January 20, 1910.

The Pre-Nuptial Plumage of the Sanderling.—At the meeting of the British Association at Winnipeg last year, Dr. C. J. Patten read a paper on the pre-nuptial plumage of the Sanderling (*Calidris arenaria*), of which the following is an abstract:—

It may be well to state very briefly what led up to this investigation. Repeated observations on the Sanderling during its vernal migration shew that the species occurs in varying numbers throughout the breeding-season on different parts of the British coast. A certain proportion of the migrants, pushing northward, appear to sojourn with us during the summer. These birds, while assuming what might easily be mistaken for the nuptial plumage, shew no evidence that they remain to breed, for the flocks keep to the coasts and do not split up into pairs. Based upon the above data I have elsewhere put forward the hypothesis that the birds were immature (*vide* 'Naturalist,' 1909, pp. 84, 85). Here I hope further to strengthen this hypothesis by direct objective evidence obtained from an examination of the plumage-markings. The rich variegated markings of chestnut, brown, and black, which appear on the head, neck, breast, back, and wings, are found in the summer plumage in Sanderlings in all ages, after the first winter plumage. It is generally known as the nuptial plumage. When, however, the tertials of those birds which tarry with us till late June, July, and the beginning of August are examined, it may be noticed that they, *like the tertials of the first winter plumage, are relatively short,* the longest not reaching to the tip of the fourth primary feather, the wing being folded in the natural position. By far the majority of Sanderlings which I have collected in late spring and summer have short tertials, and to such plumage I give the name of *pre-nuptial,* from its close resemblance to the true nuptial plumage which it precedes. But a few specimens collected towards the end of April and in early May, from small flocks, shewed on examination to have *longer tertials which reached halfway between the tip of the fourth and third primary, and in some cases almost to the tip of the third primary.* Such birds, I believe, have assumed the adult nuptial plumage of the second or subsequent springs. This plumage follows the plumage of the second or subsequent winters, in which the long ashy-grey tertials are easily distinguishable from the darker shorter ones of the first winter plumage.

The Annual General Meeting of the B. O. U.—We are requested by the Secretary to state that the Annual General Meeting, for 1910, of the British Ornithologists' Union will be held at the Zoological Society's Offices, 3 Hanover Square (by permission), on Wednesday, May 25th, at 5.30 P.M. The usual dinner after the meeting will take place, in conjunction with the monthly meeting of the British Ornithologists' Club, at Pagani's Restaurant, 42 Great Portland Street, at 7 P.M.

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XVIII.—*On the Ornithology of Cyprus.*—Part III.

By John A. Bucknill, M.A., F.Z.S., M.B.O.U.*

Since the publication of the two prior instalments of this paper my attention has kindly been drawn by Victor, Ritter von Tschusi zu Schmidhoffen, to a not unimportant article on Cypriote Ornithology which seems to have hitherto escaped notice. This article is by Herr G. Schrader and appeared in the ' Ornithologisches Jahrbuch ' of December, 1891. It forms the second part of a paper entitled ' Ornithologische Beobachtungen auf meinen Sammelreisen,' and purports to give an account of the birds observed and taken by the author during a visit to Cyprus between October 3rd, 1876, and April 3rd, 1878.

It appears fairly clear from certain of the data that the author must be the collector whose consignments were despatched to Schlüter, while some of them were examined by Herr August Müller, who published his account of them in 1879 (*vide* 'The Ibis,' 1909, p. 576). Schrader's paper mentions 146 species, and it is somewhat remarkable that he includes several birds which apparently did not reach Müller and which have not been recorded from the island by any other observer.

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* Continued from above, p. 47. The numbers in front of the names are those of Dresser's ' Manual of Palæarctic Birds.'

I have thought it best to incorporate in this—the third and last instalment of my paper such of Schrader's notes as can conveniently be included, and have added short particulars of the few species for the addition of which to the Cypriote list he is solely responsible, and which would in ordinary sequence have appeared in the two prior parts.

The remarks in Schrader's paper, which are interesting and useful, do not bear evidence of close accuracy, but contain several obvious mistakes and a certain amount of information the correctness of which I am inclined to doubt.

776. PHALACROCORAX CARBO (Linn.).

Sibthorp included the Cormorant in his list as *Pelecanus carbo* and it reappears in Unger and Kotschy's as *Carbo Cormoranus* Meyer. Schrader states that it sometimes appears in winter.

No specimens were obtained by Lord Lilford or his collectors, though Guillemard mentions "a pair of Cormorants" which he watched through his telescope off Cape Gata. Lord Lilford was inclined to think that the Shag was the only species of this genus to be found in Cyprus, but Madarász rightly points out that the Cormorant is not an improbable winter visitor. The only specimen obtained up to the present of which I am aware is a female taken by Glaszner on November 16th, 1902, near Larnaca and despatched to Madarász. Horsbrugh and I saw an old male on the wing close to the pier at Limassol on February 8th, 1910, and two days later Horsbrugh noticed four or five at Cape Gata.

781. PHALACROCORAX GRACULUS (Linn.).

The Shag is a resident and breeds, though not in any large numbers, in a few suitable places round the coast. It is sometimes seen on the fresh-water reservoirs.

Lord Lilford occasionally observed it in pairs or singly off the south coast in April or May, 1875, and through Guillemard received from Capt. (now Sir Arthur) Young—then Commissioner of Famagusta—in January 1889, an immature specimen. I heard of it near Kyrenia at the end of October 1908, from Major Bolton, Commissioner of that District;

and on November the 23rd, 1908, Mr. Jebb shot an immature bird at Kouklia reservoir. Mr. Nicolls found it nesting in small numbers on the Klides Islands at the extreme north-east point of Cyprus, and Horsbrugh on the 25th of April, 1909, discovered about fifteen pairs breeding on an islet close to Kyrenia and shot an immature male.

785. PELECANUS ONOCROTALUS Linn.

Guillemard in his list of Cypriote birds compiled in conjunction with Lord Lilford for the use of the latter in his 'Ibis' paper, states that "both species" of Pelican occur in Cyprus. Schrader states that he once, in November, saw a single specimen on a small lake.

Lord Lilford thought that the Roseate Pelican was at least as common as the Dalmatian in Cyprus, and was assured by the peasants that the "Ass-headed Swans" visiting the salt-lakes in winter were as white as the snow on Troödos. However, I am not aware that any specimen of the Roseate species has been actually obtained, though 'Pelicans' are common on the salt-lakes in the winter months and are sometimes seen on the freshwater reservoirs.

787. PELECANUS CRISPUS Bruch.

Lord Lilford refers under the heading of the Dalmatian Pelican to Tristram's remarks in Dresser's 'Birds of Europe' vol. vi. p. 200 (*vide infra*).

Guillemard includes the bird, as before stated, in his rough list, though he mentions neither of the two species in his 'Ibis' articles.

Dresser in his 'Manual of Palæarctic Birds,' vol. ii. p. 563, describes the plumage of this bird from an adult male taken at Limassol in 1863, which was in Canon Tristram's collection, but I do not notice any "remarks" by the latter in the text of Dresser's larger work.

Glaszner on November the 14th, 1908, shewed me an immature bird taken at the Larnaca salt-lake and had another brought to him in the flesh from the same locality on the previous day. On the 23rd of the same month Mr. Jebb sent me another nearly mature bird which he had shot at the Kouklia reservoir on that day.

788. Ardea cinerea Linn.

I am not aware that the Grey Heron—or indeed any Heron—breeds in Cyprus, but this fact is probably due to the absence of suitable situations.

Herons are, therefore, practically unknown in the island except as migrants in spring and autumn, though a few probably remain during the winter. The present species was recognised by Sibthorp. Lord Lilford and his collectors do not seem to have obtained a specimen, but the former states that the bird is occasionally observed though not abundant, and Guillemard noticed it near Larnaca in early April, 1887. Schrader met with it not uncommonly on the spring migration. Glaszner sent Madarász a specimen taken on June the 30th, 1901, from which the latter surmises that this species breeds in the island.

Mr. Jebb found three birds at Acheritou on August the 30th, 1908; Horsbrugh saw two on March the 23rd, 1909, and a single individual six days later at the same place, while he obtained with Mr. Baxendale a very juvenile specimen near Papho on May the 23rd: they also saw a single bird on the sea-shore near Famagusta on January the 11th, 1910, and four days later Mr. Baxendale and I observed another on the freshwater lake not far from the same town. We also found many later in the spring in the same locality.

789. Ardea purpurea Linn.

The Purple Heron is also in Sibthorp's list. Lord Lilford found it very common in the marshes in April and May and frequently noticed it in the wheat-fields. Schrader met with it on the spring migration, and Müller mentions an adult pair taken in the spring. Guillemard obtained an example at the very end of March 1888, near Larnaca. This species does not seem to have been met with by Glaszner.

Horsbrugh found it in some numbers at the Acheritou and Kouklia reservoirs from March the 28th to April the 20th, 1909, and obtained several specimens, while on May the 9th of the same year he observed a skin hanging up in the Mukhtar's house at Kambos, in the hills, which he was informed was that of a bird shot not long before in the neighbourhood. We also obtained it in early April 1910 at the Famagusta reservoirs.

791. ARDEA ALBA Linn.

Sibthorp includes the Great White Egret or Heron in his list and writes in his journal that he shot a specimen near Famagusta on the morning of April 18th (1787).

Lord Lilford and his collectors did not meet with it, but the former was told by his Spanish companion, who was well acquainted with all the common marsh birds of Andalucia, that he had seen on April the 15th (1875) at the Limassol salt-lake three snow-white Herons at least twice the size of the Little Egret, with which he was very familiar.

Schrader writes that it occurs, but very rarely, on migration.

I am not aware of any other local record.

794. ARDEA GARZETTA Linn.

Lord Lilford frequently met with the Little Egret and obtained it in the south of Cyprus, while he noticed one flying over his yacht in Episkopi Bay on April the 15th, 1875 —the day he arrived at the island. Schrader states that it arrives about March the 23rd on passage but is very rare. Guillemard seems only to have noticed it near Famagusta on April the 26th, 1887.

Several "pure white small Herons" were reported on April the 28th, 1909, from the Acheritou reservoir by Mr. A. Douglas, which most probably belonged to this species.

795. ARDEA IBIS Linn.

Ardea bubulcus Audouin, B. O. U. List, p. 109.

The Buff-backed Heron was thought by Lord Lilford to be the most common member of the genus *Ardea* met with by him in Cyprus during his visit, and he mentions that his yacht was "boarded" by three shortly after the island had been sighted, on April the 14th (1875). Schrader observed this species on April the 27th and again in August, 1877; Müller mentions an adult male taken in spring; Guillemard came across the bird in early April 1888, near Larnaca, and at the end of that month near Famagusta; Glaszner sent Madarász three examples obtained in the latter half of the same month.

797. ARDEA RALLOIDES Scop.

Lord Lilford found the Squacco Heron tolerably frequent during his visit; Schrader observed some on September the 11th, 1877; Müller records an adult pair taken in spring; Guillemard met with the bird in precisely the same localities and on the same dates as the preceding species, and Glaszner sent two males to Madarász taken near Larnaca on April the 10th and May the 6th. I received a male from Mr. Barrett shot at Athalassa near Nicosia on March the 24th, 1909. Horsbrugh met with a few birds at Acheritou during his stay and obtained a male on the 9th and another on the 10th of April (1909). Mr. A. Douglas sent me a fine male, shot at the Acheritou reservoir, on May the 7th, and Mr. Baxendale came across two individuals near Papho about the same date.

800. NYCTICORAX GRISEUS (Linn.).

The Night Heron was observed by Sibthorp. Lord Lilford did not think it very abundant, but saw it on several occasions and obtained it at Limassol. Schrader noticed it on March the 10th, but thought it rare. It does not appear to have been mentioned by Guillemard in his 'Ibis' articles; but Glaszner sent to Madarász four specimens taken near Larnaca in March, April, and May, and shewed me a male in his possession from the same neighbourhood. Horsbrugh obtained an immature male at Kouklia reservoir on April the 9th, 1909; an adult male frequented the large tank (which contains many fishes) in my garden at Nicosia for some hours on April the 13th in the same year; Mr. Baxendale and Horsbrugh shot a very juvenile specimen on May the 23rd in some reed-beds near Paphos, and the former secured a fine young male out of a flock of six near the same place on October the 8th.

803. Ardetta minuta (Linn.).

The Little Bittern was also recognised by Sibthorp. Lord Lilford thought it common at the latter end of April and beginning of May, and believed that it bred in a certain locality near Limassol as well as in other parts of the island. Schrader met with it in small numbers at the end of April and at the end of August, 1877. It was noticed by Guillemard on May the 20th, 1888, near Famagusta, and Glaszner shewed me a male obtained near Larnaca on May the 4th, 1905. Mr. Baxendale sent me up one which he had shot near Papho on April the 20th, 1909; Mr. C. Noble, with Horsbrugh, observed a specimen on a little marsh near Karavostasi on May the 9th, 1909, and on May the 18th the latter found what he thought was probably a nest of this species in a large bush overhanging a stream in the Papho district. Mr. G. F. Wilson secured a female at Larnaca on October the 17th. This species is evidently a visitor at the migration seasons, and perhaps occasionally nests in Cyprus.

807. Botaurus stellaris (Linn.).

The Bittern was obtained by Guillemard once only, namely near Famagusta on May 20th, 1888. Glaszner sent a male to Madarász, taken on November the 29th, 1902, and shewed me a female obtained near Larnaca on January the 24th, 1905. The bird is known to Mr. Nicolls as an occasional winter visitor, and he shot three in a very secluded marsh in the Famagusta district on March the 14th, 1908. Mr. Baxendale shot two at Avgasida Marsh on December the 26th, 1909; a female on January the 12th, and a male on February the 20th, 1910, all in the Famagusta neighbourhood. Captain F. W. Wright, of the Army Service Corps, sent to Horsbrugh a fine female shot at the Limassol salt-lake on February the 13th, 1910.

809. Ciconia alba Bechst.

The White Stork is not a common visitor on its spring and autumn migrations, though it is incorrect to assert, as has been recently done, that it never occurs in the island. Still, there can be no doubt that its main line of migration in the eastern basin of the Mediterranean follows the coast of the Levant. I should think that it is extremely probable that the birds "not unlike ducks, but with a pointed beak, which eat the locusts and thus lessen their ravages," referred to by Cornelis van Bruyn in 1683, as from time to time visiting Cyprus, were of this species. Lord Lilford observed a large flock coming in to land from the south near Galinoporni in the extreme north-east of the island on April 26th, 1875. Schrader states that he saw the nest in Nicosia, but I have hardly any doubt that this is a mistake. Miss Bate observed three birds on October 27th, 1901, near Kouklia reservoir, standing in some cotton-fields, and Horsbrugh, on the 30th March, 1909, saw a single individual at the same place. This species does not seem to have been met with by any one else.

812. PLATALEA LEUCORODIA Linn.

Schrader states that the Spoonbill is occasionally met with, and Müller mentions an adult male taken on November 1st (1877–8). I am not aware of any other record of its having been obtained in the island, but Mr. A. K. Bovill informs me that it has been observed near Famagusta.

818. PLEGADIS FALCINELLUS (Linn.).

The Glossy Ibis was not identified with certainty by Lord Lilford on his visit to the island, but there is no doubt that it is a regular and not very uncommon visitor on its spring and autumn migrations. Schrader writes that he observed several flights in April and August, 1877. Müller mentions an adult pair obtained in spring; Sir Samuel Baker, who visited Cyprus in 1880, records shooting an example on the freshwater lake near Famagusta; Guillemard, on his first visit, found small flocks of a dozen or fifteen individuals near Larnaca in mid-April, while he records the bird as numerous near Famagusta at the beginning of the same month in 1888, and obtained specimens. Horsbrugh saw about a dozen on the 9th of April, 1909, at the Acheritou reservoir, and obtained from there through Mr. Douglas a fine male and female on the 19th of the same month.

819. Phœnicopterus roseus Pall.

The Flamingo is a common visitor in the winter to the large salt-lakes of Limassol and Larnaca, and, although records of its having been shot are rare, owing to its wary habits, it can be observed at times in very large numbers. Lord Lilford received a specimen from Pearse, without data, but killed, no doubt, near Larnaca, in the winter of 1878–9, but the bird does not seem to have been obtained by Guillemard or Glaszner. Schrader regarded it as an extremely rare bird of passage only. It is very well known, however, to the residents in the two towns above-mentioned, and I have a note of a slightly wounded individual being taken alive during the spring of 1909 on the Limassol Lake. Passing through Larnaca in the first days of March 1909, Horsbrugh noticed large numbers at the salt-lake there. I have no note of an occurrence at the fresh-water reservoirs, but Mr. Greenwood informs me that at Papho he has seen several killed by flying against the lighthouse. Mr. Michell, the Commissioner of Limassol, informs me that, though extremely common, they almost invariably keep towards the centre of the lake, well out of gun-shot. In January 1910, Horsbrugh and I found a flock of some four hundred at the Larnaca salt lake, and Mr. T. Greenwood kindly obtained for us two fine mature and two immature specimens, one of the latter being alive and living for some time in captivity. In February 1910, at Limassol salt-lake, Horsbrugh also met with very large flocks.

820. Anser ferus Schaeff.

It is, perhaps, convenient here to make a few observations upon the Anatidæ in general in relation to the island.

About the middle of October large flights of Ducks commence to arrive in Cyprus; many almost immediately pass further south, but some establish themselves on the lakes, reservoirs, and other suitable localities for the winter. As the weather grows colder in the north more and more stream in, accompanied by Geese and sometimes by Swans, and from November until the return migration—which takes place in

March and April—is over, huge numbers of birds of this Family may be observed on the larger sheets of water. In the spring these winter residents, joining ranks again with the army now moving north, soon disappear, and in June, July and August it would puzzle most people to find a single Duck in the island. It may seem remarkable that so very few remain during the summer, but the fact is that there are no very suitable localities for Ducks to breed in; the freshwater reservoirs and lakes are, as a rule, dry, either from drainage off of the water or from natural causes, and their banks are bare and afford little, if any, suitable cover; the salt-lakes are no better than a slush of brine, and the streams, with very few exceptions, are exhausted or diverted at the higher levels for domestic or agricultural purposes. An interesting document kindly placed at my disposal by Mr. Michell, the Commissioner of Limassol, well exemplifies the disappearance of water-fowl in summer: it is a daily record for nearly a year (from March 10th–November 20th, 1908) of the birds observed at the great Limassol salt-lake, kept, at request, by the salt-guard, an intelligent Cypriote minor official. Out of hundreds of entries, most of which relate to Swans, Geese, Ducks, and Cranes, the last summer note is on June 8th "a very few ducks," and from thence onward, with the one exception of July 18th, "four ducks," there is no record of any of the Anatidæ until September 18th when "ducks" again appear in the journal, and continue daily to the conclusion of the diary.

Some of the local Greek names used by this official—the record being kept in Greek—are rather unintelligible, but "Παπῆρες" "Βαρβαρόχηνες," "Γερανοί," "Ἔποπες," "Κουβοῦδες," "Ορτύκια," "Πεκατζόνες," and "Μελισσοφάγοι" are easily recognisable as "Ducks," "Wild Geese," "Cranes," "Hoopoes," "Wild Swans," "Quails" "Snipe," and "Bee-eaters."

Notwithstanding the great abundance of the Duck tribe in winter, definite records of the rarer species have been, hitherto, meagre. Sibthorp mentions the Mallard, the Garganey, and another species unknown to him which he called

"*Anas cypria.*" Unger and Kotschy add the Grey Lag Goose only. Lord Lilford identified none except the Marbled Duck, while Pearse did not send him a single specimen. Schrader, however, mentions the Mute Swan, Common and Ruddy Sheldrake, Shoveler, Pintail, Wigeon, Teal, and Tufted Duck, in addition to those already recorded. Müller changes Sibthorp's and Unger and Kotschy's Garganey to the Teal (very likely correctly). Glaszner, at any rate up to the appearance of Madarász's paper in 1904, had sent the latter nothing but the Teal. Guillemard added the Gadwall, Pochard, White-eyed Duck, and Scoter.

Our own records have, I am glad to say, amplified and confirmed previous observations very considerably.

The Grey Lag Goose is a winter visitor in considerable numbers, particularly in severe weather. It was first mentioned by Unger and Kotschy, and is stated by Schrader to occur in small numbers in winter on the lakes. Müller refers to a young male shot on November 25th; Guillemard mentions having seen "Geese" near Larnaca on one occasion, but does not seem to have ever identified any. On November 17th, 1907, and in January 1908, I saw at the reservoirs between two and three hundred Geese which were probably chiefly of this species. On the 21st of November, 1908, Mr. Jebb reported their appearance in the same locality again. In December 1908, a large flight visited the estuary of a river near Papho, and Hadji Dimitri—an excellent sportsman, and Mukhtar of a village called Kouklia—obtained four at one shot, and sent them to Mr. T. Greenwood. One of these was given to Mr. Baxendale, who also at about the same time saw a wounded bird, no doubt from the same gaggle. Mr. Nicolls, in the middle of February 1909, shot another at Acheritou, but on Horsbrugh's arrival at the reservoirs on March the 23rd all the Geese had disappeared. Wild Geese occur also in considerable numbers on the salt-lakes, but they are only differentiated by the salt-guard who kept the diary, as "Black" and "White-spotted." However, even from this meagre detail, one can gather quite clearly that no Geese are to be found there after the beginning of April, while they do not re-appear until the beginning of November.

821. Anser fabalis (Lath.).

Anser segetum Gmelin, B. O. U. List, p. 115.

Although the Bean Goose is probably not an infrequent visitor to the island in winter, it has hardly ever been identified. Mr. Nicolls obtained a single specimen in December 1904, near Famagusta. I stalked and shot at a solitary bird on the 7th of December, 1908, in the marsh on the coast at Morphou, and as it was in an open flat, and I had it under observation at a range of about sixty yards with my glasses for quite twenty minutes, vainly watching for it to walk closer to the rushes in which I was concealed, there could be no doubt as to its identity. It came in from the sea, there being a strong gale blowing at the time, and when I shot at it, disappeared inland.

829. Branta bernicla (Linn.).

Bernicla brenta, B. O. U. List, p. 117.

Black Geese, some of which are certainly Brent, visit the waters of Cyprus in some numbers during the winter, and the salt-guard's diary at Limassol Lake contains numerous entries between November and March of "*χῆνες μâυροι.*" Cobham, in his 'Hand-book of Cyprus,' 1907, states that this species is to be seen in the marshes in the winter. My only definite record, although I have more than once seen parties of Geese at a distance on the sea which I have very little doubt were Brent, is of a specimen which was shot at Kyrenia in December 1908, and identified by Major Bolton, the Commissioner of that district, who is well acquainted with the species.

836. Cygnus olor (Gmel.).

Wild Swans regularly visit the reservoirs and salt-lakes in winter, but not, as a rule, in any numbers. Schrader states that he met with two birds of this species in the winter of 1876–7 near Larnaca. The salt-guard's diary contains notes of two Swans which seem to have frequented the Limassol Lake from March the 10th to the 26th, while on the 5th of November, 1908, sixteen Swans were observed at Acheritou; one of these was shot at Kouklia, and, judging from the description given to me, was probably an immature bird of this species. Swans were also seen on the reservoirs in 1909, but the only definitely identified specimen which, so far as I am aware, has been recorded, is one of the Mute Swan, obtained by Guillemard in mid-April, 1887, on a lake near Larnaca, out of a party of three, which he had seen at that place on several occasions.

It is said that the Mute Swan was introduced into England by Richard Cœur-de-Lion by specimens sent from Cyprus, but I do not know on what authority the story rests.

CHENALOPEX ÆGYPTIACUS (Linn.).

I am not at all sure what business the Egyptian Goose has in Cyprus, but I am not aware that it is kept in captivity in the island. During the past four years two or three have regularly haunted the water courses near Nicosia, arriving in the first days of December and leaving about the first week in March. The dates of arrival and departure have been carefully kept by Mr. G. F. Wilson, and are as follows:—

Arrival.	Departure.
2 December, 1906.	3 March, 1907.
1 „ 1907.	15 „ 1908.
29 November, 1908.	7 „ 1909.

They are very wary.

On April 8th, 1909, Horsbrugh, who is well acquainted with the bird in South Africa, saw two at the Kouklia reservoir which he identified with absolute certainty.

839. TADORNA CORNUTA (S. G. Gmel.).

The Common or Burrow Sheldrake is a winter visitor, though apparently not abundant. It is mentioned by Schrader as occurring in small flights in winter.

Guillemard met with it near Famagusta at the beginning of February 1887, and obtained it at Kouklia marsh at the end of that month. Mr. Nicolls has shot it at Acheritou once or twice in winter, but otherwise none of us have come across it yet.

840. TADORNA CASARCA (Linn.).

Lord Lilford did not meet with the Ruddy Sheldrake himself, but was positively assured that it bred in the Papho district. Schrader states that it occurs in winter and is rather more common than the preceding species. Guillemard, who states that it is not an uncommon bird in Cyprus, met with it in a marsh in Avgasida, not very far from Salamis, on about the 9th of March, 1888, and afterwards obtained it through his "shikari" in the Famagusta marshes.

Mr. T. Greenwood sent me a fine female shot near Larnaca on February the 24th, 1910.

842. ANAS BOSCAS Linn.

The Wild Duck or Mallard is a very common winter visitor, and, though occurring in large flocks on the big sheets of water, is well enough scattered over the smaller waters to offer more chances of sport than any other Duck, except perhaps the Teal: a very few undoubtedly stay all the summer.

844. CHAULELASMUS STREPERUS (Linn.).

Up to the present the Gadwall has been included in the list solely on account of its name being written by Guillemard in the rough catalogue compiled by him in conjunction with Lord Lilford for the latter's use, but Lord Lilford did not meet with it, and no specimen was obtained by Guillemard, who does not mention it in his 'Ibis' articles.

In the middle of February 1909, Mr. Nicolls shot a single specimen at Acheritou. Horsbrugh found three or four couples—paired—at the end of March 1909, at the same reservoir, and on the 23rd obtained a fine male there.

845. SPATULA CLYPEATA (Linn.).

The Shoveler is not at all an uncommon winter visitor. Schrader, however, called it uncommon. Guillemard met with it on a lake near Famagusta in early February, 1888, at Kouklia marsh at the end of the same month, and again as late as May the 20th in the same year, close to Famagusta. Mr. Jebb noted its first arrival at the reservoirs on October the 6th, 1908, when he obtained four specimens; it has frequently been shot during winter by Mr. Nicolls and other sportsmen, and at Acheritou, at the end of March, Horsbrugh noticed some twenty couples—paired—and shot several specimens. During December 1909 and January 1910, Mr. Baxendale, Horsbrugh and I obtained quite a number of examples from various localities.

846. Marmaronetta angustirostris (Ménétr.).

Sibthorp included in his list an unidentified species under the name *Anas cypria* and gave as its local name the Greek "Π*απερό ψάρο.*"

Lord Lilford stated that he had some reason to believe that this name (which appeared unaltered in Unger and Kotschy's list) was intended to refer to the Marbled Duck; but no reason is given for this view and I regret that I can find nothing definite to support it. However, Lord Lilford recognised a small flight of Marbled Duck on the shores of Episkopi Bay on April 15th, 1875, and his yacht-captain shot a female near Limassol early in May, which evidently had a nest. Guillemard obtained this duck near Larnaca on April the 8th, 1888, and took its nest and eggs near Famagusta later in the same year. The only personal record I have concerning it is that I bought three examples in Limassol bazaar on February the 9th, 1909.

848. Querquedula circia (Linn.).

Sibthorp included the Garganey in his list, and it re-appeared in that of Unger and Kotschy. Müller, perhaps rightly, replaced it by the Teal. Guillemard, who met with it at the beginning of April near Famagusta, regarded it as fairly common, though a migrant on passage only. At the end of March and beginning of April, 1909, Horsbrugh found a few pairs at both the Acheritou and Kouklia reservoirs, and obtained specimens in both localities.

850. Nettion crecca (Linn.).

Querquedula crecca, B. O. U. List, p. 127.

The Teal is an abundant winter visitor, arriving towards the middle of October and leaving towards the end of March or beginning of April. It occurs in large flocks on the big sheets of water, but is also well distributed in other suitable localities. During his visit to the reservoirs, at the end of March and beginning of April, 1909, Horsbrugh found the Teal the most common Duck and still in small parties.

853. Dafila acuta (Linn.).

The Pintail is a common winter visitor. Schrader, however, described it as rare. It was met with by Guillemard on a lake close to Famagusta in early February 1888, and at the end of the same month at Kouklia marsh. It has often been shot in winter by Mr. Nicolls and others. A large flight was noticed by Mr. T. Greenwood at Papho on March the 6th, 1909, and a day or two afterwards he obtained an individual which, being only winged, he kept in captivity for a long time; he informs me that this was a migrating flock, and that the birds are never seen in that neighbourhood for more than a few days at these seasons. At the end of March Horsbrugh found the Pintail fairly numerous at Acheritou and Kouklia reservoirs and, as a rule, paired; he noticed at the former water some fifteen or twenty couples, and at the latter only three or four pairs. During December 1909, and January and February 1910, Mr. Baxendale, Mr. Nicolls, Horsbrugh and I obtained several specimens.

854. Mareca penelope (Linn.).

The Wigeon is in my opinion undoubtedly the most abundant Duck that visits the island. It is an exceedingly common winter guest, and forms a large proportion of the birds which fall to the gun near the reservoirs and lakes. Schrader refers to it as an uncommon winter migrant. Guillemard came across it in early January, 1888, near the Limassol salt-lake, and near

Famagusta in early February. From the first snap of coldish weather up to at any rate the beginning of March, thousands are to be seen at Acheritou and Kouklia. On November the 17th, 1907, at Kouklia, and on January the 15th, 1908, at Acheritou, I must have seen, at a very moderate estimate, five thousand in the air together, but except for an occasional chance shot they are usually unapproachable. In the marshy ground near the salt-lakes, and where there is some cover, very fair bags are sometimes made. Horsbrugh at the end of March, 1909, found very few remaining on the reservoirs, only about six pairs. I have frequently bought examples of this species in the markets, and it is well known to all local sportsmen.

857. ÆTHYIA FERINA (Linn.).

Fuligula ferina, B. O. U. List, p. 130.

The Pochard is a tolerably common winter visitor but is, no doubt, not distinguished from the Wigeon by most local sportsmen. It was not mentioned by Guillemard in his 'Ibis' articles, but he brought back a female taken near Famagusta on March 16th, 1888. Mr. Nicolls tells me that he has obtained it on the reservoirs in winter; and Horsbrugh, at the end of March 1909, found it in fair numbers at Acheritou and Kouklia, noticing about twenty-five couples in all—paired—and obtaining several specimens. I shot an old male at Kouklia on December the 27th, 1909, out of a flock of twelve, and on the 17th of January, 1910, Mr. A. Douglas sent Mr. Baxendale another drake shot at Acheritou on the previous day.

859. ÆTHYIA FULIGULA (Linn.).

Fuligula cristata, B. O. U. List, p. 129.

The Tufted Duck is a common winter visitor. Schrader states that it is uncommon. Müller mentions a young male taken on October the 28th. Guillemard seems only to have once come across the bird, obtaining it in Kouklia marsh in the beginning of March 1888; but it is well enough known to, and sometimes shot, by Mr. Nicolls and other sportsmen on the reservoirs.

I bought a male and two females in the Larnaca market on November the 6th, 1908: Mr. Nicolls shot a male at Acheritou in mid-February, 1909, and from the 23rd of March till the 2nd of April, when he left the neighbourhood, Horsbrugh saw quite a number on the Acheritou and Kouklia reservoirs, chiefly in pairs; he counted about fifteen couples at the former place and six pairs at the latter, and obtained several birds on both sheets of water.

We have shot several specimens this winter (1909–1910).

860. ÆTHYIA NYROCA (Güld.).

Nyroca ferruginea, B. O. U. List, p. 130.

Guillemard seems only to have met with the White-eyed Duck once, when he obtained it in Kouklia marsh in the beginning of March 1888, apparently at the same time as the preceding species. It is, however, evidently not uncommon, as we obtained several specimens during the winter; a female bought in the Famagusta market on January 19th; a female shot by Mr. A. Douglas at Acheritou on the 21st; a pair shot by Mr. Nicolls at Acheritou on the 23rd; a female bought in the Famagusta market on February 1st; and a male was seen by Horsbrugh at Limassol salt-lake on February 5th, 1910. We shot both varieties of the female.

862. CLANGULA GLAUCION (Linn.).

I am pleased to be able to add the Golden-Eye to the list of the Ducks of Cyprus.

Horsbrugh obtained a female at Kouklia reservoir on April 9th, 1909. It appeared to be in transition plumage, and at first puzzled us, but was subsequently identified by the late Dr. Bowdler Sharpe.

869. ŒDEMIA NIGRA (Linn).

At the end of March 1888, Guillemard saw a Scoter, which he was almost certain was of this species, near the sea not far from Famagusta. Madarász, however, considers that it was probably the Velvet Scoter (*Œdemia fusca*).

On February 7th, 1908, I saw three Scoters at the mouth of a small river near Papho, but they were too wary for me. I know of no specimen of any Scoter having been actually shot.

883. Columba livia Bonn.

The Rock-Dove is a common resident in suitable localities. Where the cliffs are high by the sea it occurs in large numbers, as well as inland amongst the mountains, while even in convenient places in the plains it may frequently be seen.

We took a pair of fresh eggs as early as March the 20th, but I have notes of eggs as late as May the 7th. This Pigeon nests in Cyprus in ancient ruined vaults, and even in old deep-cut wells.

887. Columba œnas Linn.

The status of the Stock-Dove in Cyprus is very unsatisfactory. Sibthorp did not include it in his list, though he did catalogue the Rock-Dove as *Columba rupestris.* Unger and Kotschy refer to *C. œnas* Linn., and not to *C. rupestris*, but I have little doubt that this is merely a case of intentional change of nomenclature and not of substitution. Müller, who received specimens and eggs of the Rock-Dove only, points out, for reasons which he gives in some detail, that it is clear that by the *C. œnas* of Unger and Kotschy is meant the Rock-Dove.

The only record of the Stock-Dove in Cyprus of which I am aware is that of Lord Lilford, who states that he saw a pair of these birds near Trikhomo; but he adds that as they were some way off it is possible that they were Wood-Pigeons.

892. Columba palumbus Linn.

The Ring-Dove or Wood-Pigeon was mentioned by Sibthorp, but was not observed by Lord Lilford. Guillemard, however, met with it in June 1887, and January 1888, though he writes of it as if it appeared to be uncommon. Glaszner does not seem to have sent Madarász any specimens. I have found this bird quite common on the southern range, where, as probably in some other wooded districts, it is a resident, though according to my observations its numbers are somewhat increased by winter visitors which arrive in the autumn. I found a good many on my arrival at the Troödos summer-station in the beginning of July, and they are sufficiently numerous to afford a little sport. In May and June Horsbrugh came across this species fairly frequently in his tour through the hills and obtained several specimens. I have examined the crops of over a dozen, shot during August and September, and found the contents to consist largely of the seeds of the coniferous trees with which the southern range is covered, but also some barley.

895. Turtur communis Selby.

The Turtle-Dove is a very abundant visitor on the spring and autumn migrations, and a considerable number—though small compared with the large numbers of birds of passage—remain for the summer, and nest in the mountains. The spring migration commences about mid-April and lasts approximately a month; the autumn movement takes place from towards the end of August till the commencement of October. In some years the bird occurs in enormous numbers; Lord Lilford considered it more abundant in Cyprus than in any other part of the world which he had visited, and Guillemard records a single flock of six or seven hundred. I found some numbers on Troödos on my arrival there on July 1st, 1908, and from that locality Mr. Nicolls sent me fresh eggs taken on June 10th, 1909. The bird was included in Sibthorp's list. In mid-September, during the migration, I have seen dozens exposed for sale, both dead and alive, in the Limassol bazaar: they are both shot and "limed" for the table.

899. Turtur decaocto (Frivaldsky).

The Collared Turtle-Dove was included by Sibthorp in his list. Lord Lilford noticed one or two individuals in the streets of Larnaca, and it seems to have been observed by Guillemard.

There are always a few to be seen in the town of Nicosia, where I find they are very familiar and tame, frequenting the old secluded Turkish gardens of which so many exist inside the walls. Mr. G. F. Wilson informs me that this species occurs in other towns in the island. It is certainly a resident, but in Cyprus, as I understand is the case in other places, seems to dwell only in inhabited areas in an almost semi-feral state.

900. TURTUR SENEGALENSIS (Linn.).

Horsbrugh and I found the Senegal Turtle-Dove in small numbers—in parties of three or four—on the Government farm at Athalassa, near Nicosia, at the beginning of May 1909. The locality is covered with young wattle and eucalyptus trees, and is well suited to the bird's habits. Perhaps I need hardly add that after five years' residence in Pretoria I am most intimately acquainted with this species, and as Horsbrugh knows it in South Africa as well as I do, there could be no possible doubt as to its identity.

904. PTEROCLES ARENARIUS (Pall.).

It is unfortunate that, though Sand-Grouse are at times abundant in the Mesaoria plains, very little is yet known as to the number of species which actually visit or live in the island. Sand-Grouse are well known to the English sportsmen in Cyprus. They are extremely wary and shy, but a few are bagged every year in the autumn.

Mr. G. F. Wilson, who has shot a large number, considers that three species of *Pterocles* occur in Cyprus: no doubt *P. arenarius* and *P. alchata*, and perhaps *P. exustus*, though until further definite information is forthcoming it is, of course, impossible to speak with certainty, except as to the two former species.

I have, hitherto, only been able to identify the Black-bellied Sand-Grouse (*P. arenarius*). Miss Bate procured an immature male in the Nicosia bazaar in November 1901, and picked up some feathers belonging to this species in the plains not far from that town. Mr. G. F. Wilson has lent me two eggs, taken a few years ago in the Mesaoria, which, after a careful comparison with others at the South Kensington Museum, I am quite satisfied are those of this species. Horsbrugh identified one male and two females taken in the island, and kept in captivity by Mr. T. Greenwood, as *P. arenarius.* I gather from Mr. G. F. Wilson that this is the species generally met with, that it is partially resident throughout the year, and that the numbers of the resident Sand-Grouse appear to be augmented considerably by migrants in autumn and probably in spring. A flock of some twenty or more individuals frequented at evening a lake about five miles from Nicosia, and on November the 26th, 1909, Mr. G. F. Wilson shot a fine female which was sent to me for identification. Mr. Baxendale on January the 20th, 1910, obtained three live specimens—two hens and a cock—from the Mukhtar of Vatili, a village between Nicosia and Famagusta; they were quite tame and had been taken by him as young chicks and fed and reared with his poultry. He added that the bird breeds annually near his village in small numbers and lays two eggs.

906. PTEROCLES ALCHATA (Linn.).

Sibthorp in his Journal writes, "May 3rd (1787) near Hagios Georghioos . . . (on the flats between Larnaca and Famagusta) our chasseur shot a very rare bird of the *Tetrao* kind, *T. alchata*, called by the greeks 'παρδαλός'; this is a bird of passage visiting the island in the spring and retiring in the autumn".

To the above I can add nothing at present of any value except that Mr. G. F. Wilson identifies one of the three species which he distinguishes when shooting as the Pin-tailed Sand-Grouse.

908. PTEROCLES EXUSTUS (Temm.).

The Singed Sand-Grouse is perhaps the third species believed to visit or occur in the island. I have as yet no definite record of its having been obtained, but Cobham in his 'Hand-book of Cyprus' 1907, states that this is probably one of the species which is found in the island.

911. Phasianus colchicus Linn.

References to the Pheasant in Cyprus are made by the mediæval writers, but it has long ago disappeared. Mariti, a most reliable and accurate author, who was acquainted with both Partridges and Francolins, writing towards the end of the 18th century, states that "pheasants, which abounded in Cyprus even after its unhappy absorption in the Ottoman Empire, have all been exterminated."

An attempt made very shortly after the British occupation to re-introduce Pheasants by Lord John Kennedy and Captain A. S. Stevenson was not a success, though the birds were turned down at Aghirda Wood in the Kyrenia district, probably as suitable a locality as there is in the island. Through the kindness of Mr. W. Fremlin we have this year been able to make another attempt at the introduction of Pheasants. Horsbrugh brought out in January twenty-eight birds, which have been distributed in two centres and some of which are, at present, doing very well.

947. Caccabis chucar (Gray).

The Chukar Partridge is a resident, and the only Partridge which occurs in Cyprus. The introduction of modern weapons of precision in large numbers has, within the last twenty years, caused a very marked decrease in the abundance of the species. From early accounts it must have been extremely numerous. At present, though found in all parts of the island, it is only in a few secluded localities that a bag of eight or ten brace may be confidently expected. Though mercilessly pursued it is so wary a bird and so well accustomed to take care of itself, that it is in little danger of extermination. It is, notwithstanding the law, by no means an uncommon practice for the peasants to utilize the eggs of this bird for making "Easter" cakes or omelettes, but I am glad to say that the offenders, when discovered, are now promptly prosecuted. It is a good bird on the table with a well marked flavour of its own. It nests during April and May and lays sometimes as many as sixteen eggs; the average size of twelve was 1·53 × 1·18 inches.

This Partridge thrives well and breeds in captivity. It is a very common cage-bird in the bazaars, and becomes extremely tame.

In 1883 an attempt was made by Mr. J. P. Middleton to introduce the English species, *Perdix cinerea.* A few pairs were turned down in standing barley at Kolossi farm, near Limassol, but the experiment was not a success, and their fate is a mystery.

952. **Francolinus vulgaris** Steph.

The Francolin is described from Cyprus as early as 1738, by Dr. Pococke, and is referred to at some length by numerous writers.

It is therefore unnecessary to say more than that it is a resident, and, except in a few remoter localities such as the Papho and Karpas districts where there is ample cover, is now by no means common. It is, unfortunately for itself, not a wary bird and very easy to shoot, and, in consequence, although protected by law entirely until 1911 it still, it is to be feared, frequently falls a victim to unscrupulous gunners. It need hardly perhaps be stated that it is far less abundant than it was forty or fifty years ago. It is, however, still well known to all local sportsmen, and I think that, on the whole, the protection supposed to be afforded to it by the law has not been altogether without effect. When shooting in the Papho district in the autumn of 1908 I saw as many as a dozen individuals in a day. It nests in late April, May and early June, and I have notes of clutches of from eight to eleven eggs from April the 24th to June the 4th. I am told that it is an excellent table bird. The mention of the occurrence of the "Ptarmigan" in Cyprus by an anonymous writer in 'The Field' of April the 27th, 1889, is obviously a mistake for "Francolin."

958. **Coturnix communis** Bonnaterre.

The Quail has been well known in Cyprus for centuries and is constantly referred to by mediæval writers.

It is at the present day a regular visitor in some numbers on its spring and autumn migrations, and, whilst a few probably nest annually in the island, more—often a fair sprinkling—remain throughout the winter. But in Cyprus, as in other places, the number of visitors is extremely variable: in some years very fair sport can be obtained during the autumn, whilst in others the bird is noticeably scarce.

Lord Lilford found "very great numbers" in the middle of April, 1875, in the Famagusta neighbourhood, and he was told that the vernal migration was a normal one; on the other hand, Guillemard states that he did not see more than a dozen during his two visits in 1887 and 1888—a period which included two spring seasons. During the early influx, the growing and standing crops, and the fact that it is then the close season for shooting, no doubt hide its numbers; but even in the autumn there has been of late years, as I am informed, no great inrush such as is regularly met with on many parts of the Mediterranean littoral. Twenty couple would be an excellent bag in Cyprus; and I am inclined to think that, at any rate as a rule, the island receives only outliers of one of the vast streams which annually move north and south.

The spring migration commences at the end of March, but the migrants have passed by the end of April: the return passage takes place at the end of August and during September and October.

With regard to the breeding of this species in the island, Müller mentions two clutches of eggs, one of thirteen taken on April the 10th, and the other of ten on May the 15th. I have notes of its occurrence in every month of the year, and in July 1908, Mr. G. F. Wilson found very young birds near Nicosia: its nesting is also well known to other English sportsmen. As to its being a winter visitor my own notes are voluminous and conclusive, and I have eaten the bird in November, December, and January: nine were shot by a gentleman at Famagusta on January the 10th, 1909.

The best bag I have heard of since I have been in the island is ten and a half couple by Messrs. T. Greenwood and Baxendale at Papho on October the 11th, 1908.

In the autumn the Quail feeds very greedily on sesame seed, with which one finds the crop crammed. It need perhaps hardly be added that this species does not frequent the hills.

984. Rallus aquaticus Linn.

Lord Lilford found the Water-Rail not uncommon in suitable localities, and Guillemard observed a number near Larnaca at the beginning of February. Schrader states that it occurs rarely in winter. Glaszner sent a good many specimens to Madarász, taken near Larnaca in October, November, December, and January. I shot a female at Morphou on December the 12th, 1901, and saw another at Papho on February the 7th of the same year. Mr. Baxendale obtained three at Avgasida marsh on December the 26th, 1909; Mr. G. F. Wilson shot a male near Nicosia on January the 9th, 1910; and I have notes of other specimens during this winter.

It is apparently only a winter visitor, but its skulking habits prevent it from being very often noticed.

986. Porzana maruetta (Leach).

Lord Lilford found the Spotted Crake in abundance in every likely spot which he hunted up with his dogs in April and early May, and had no doubt that it bred in the island, though he did not discover the nest. Schrader met with it in October in the marshes. Müller refers to four adult males taken on November the 11th and 13th. I do not find any mention of the bird by Guillemard, and Glaszner does not appear to have forwarded it to Madarász. Mr. Baxendale sent me a single specimen taken at Papho on March the 7th, 1909; Horsbrugh shot a male at Acheritou reservoir on March the 31st, and saw another at Karavostasi near Morphou Bay on May the 7th of the same year. Mr. Baxendale shot an adult male near Papho on October the 3rd, 1909, and we obtained some examples early in April 1910, on the freshwater lake at Famagusta.

It is no doubt mostly a bird of passage, but probably some individuals nest and some remain during the winter.

987. Porzana bailloni (Vieill.).

Lord Lilford shot an adult female Baillon's Crake near Larnaca on April the 19th, 1875. Glaszner sent Madarász a male taken at the same place on November the 8th, 1901. I had a bird of this species brought to me alive on April the 4th, 1909, which had been captured near Pera, about ten miles from Nicosia. From April the 1st, 1910, onwards, Messrs. Baxendale and Horsbrugh obtained several at the Famagusta marshes. Possibly it is a resident, but I am disposed to regard it as a visitor on the migrations and in winter.

989 Porzana parva (Scop.).

Guillemard observed the Little Crake near Larnaca in early February 1887, and shot a specimen near the same place on April the 7th in the following year. Messrs. Baxendale and Horsbrugh found it quite abundant at the Famagusta lakes at the end of March and beginning of April, 1910, and obtained over a dozen specimens. It is a visitor at the seasons of migration and perhaps in winter.

993. Crex pratensis Bechst.

The Corn-Crake or Land-Rail was included in Sibthorp's list, but was not met with by Lord Lilford. Schrader refers to it as a spring and autumn migrant. Guillemard heard it once on March the 6th, 1888, and Glaszner sent a female to Madarász taken on August the 27th, 1901, near Larnaca. Mr. G. F. Wilson records an example shot near Nicosia in mid-September, 1908; I flushed one when shooting near Papho close to the sea on September the 21st; Mr. G. F. Wilson himself shot one at Nicosia on October the 10th and Mr. Baxendale another at Papho on October the 19th—all in 1908.

I have never heard its cry in Cyprus, and I believe that it is only a spring and autumn migrant or an occasional visitor.

998. Gallinula chloropus (Linn.).

The Water-hen or Moor-hen is another species which was recognised by Sibthorp.

Lord Lilford called it "common in all suitable localities," but I can only find one record by Guillemard, namely where he describes shooting a specimen near Larnaca in early April, 1887. Glaszner sent Madarász three examples taken near the same place in November and December. I have a note of seeing one taken alive in the autumn of 1908, in Limassol district; Mr. Baxendale has frequently met with and shot the bird near Papho in winter. Horsbrugh found a few at Kouklia reservoir near Famagusta in early April, 1909, and obtained specimens there; I had a male brought to me alive on April 12th, taken near Nicosia, and another sent to me from Acheritou reservoir on May 1st; Horsbrugh also saw an individual near Papho on May the 23rd—all in 1909.

This species is probably a partial resident, but mainly a visitor on the migrations and in winter.

999. Fulica atra Linn.

It seems curious that the Coot should have escaped notice until Pearse sent specimens to Lord Lilford, who did not himself meet with the bird. But Schrader states that the Coot is found from the end of October until the end of February on the marshes and lakes of the island. Guillemard does not mention it, but seems to have shot one at Famagusta in March. Glaszner sent a male to Madarász from Larnaca, taken in October.

Lord Lilford was told that this species abounded on the fresh and salt water lakes in winter. Whether it used to be as common as it is now, I should greatly doubt, but the establishment of the large freshwater reservoirs in the Famagusta district has created for this—and other aquatic birds—an ideal resort as long as there is water. In October 1901, Miss Bate saw the Kouklia reservoir crowded with Coots, and was told that they nested in the corn-fields round the edge of the water and that the peasants collected great quantities of eggs for food. I have seen them in thousands in the winter at both Acheritou and Kouklia, where they breed in summer whenever the water is not run off, but they naturally leave these localities and the island when the waters are dried up or drained off, as was the case in 1908 and 1909.

The Coot may also be found on the salt-lakes.

1001. Grus communis Bechst.

Large flights of the Common Crane cross over the island at the spring and autumn migrations and are a very familiar sight: the spring movement takes place from the middle to towards the end of March: the autumn flight from towards the end of August to about the middle of September. Large numbers sometimes alight, but the bulk pass high in the air. A few frequent the marshes during the cold season, and I have notes of having seen small flocks of from a dozen to twenty individuals throughout the winter months crossing the Mesaoria plain from the Famagusta to the Morphou marshes. On January 15th, 1908, I saw and unsuccessfully stalked two on the Acheritou reservoir.

This species appears to have been first recorded by Lord Lilford.

1007. Grus virgo (Linn.).

The Demoiselle Crane is a regular spring and autumn migrant, but has not very often been definitely recorded, owing no doubt to the difficulty with which these birds can be approached. Lord Lilford met with a flock of some thirty near Larnaca in the middle of April; and Guillemard, who only found the head of a specimen on a cottage door during his first visit, subsequently observed its arrival in the same neighbourhood and obtained it at the beginning of April. It appears to stay only some two or three weeks. From observations taken at Limassol it would seem to arrive at the very end of March and return in mid-September and the beginning of October.

1010. Otis tarda Linn.

The casual references to Bustards which may be found in several accounts of Cyprus do not in general trouble to specify the species. Lord Lilford, however, gathered from what he was told in the island that the Great Bustard was a casual and somewhat uncommon visitor to the Mesaoria plain. Guillemard received similar information, and was informed by Mr. King, then (in 1887) Commissioner of Nicosia, that on one occasion he had a recently killed specimen brought to him. Mr. T. Greenwood, who has had a very long experience as a sportsman in Cyprus, tells me that he met with this bird very rarely near Famagusta; and Mr. G. F. Wilson has seen one only, namely on January the 29th, 1905, on the Mesaoria plain not very far from Nicosia.

I am not aware that any local specimen yet obtained has been properly identified as *Otis tarda*, but I think that there can be little doubt that the species is an occasional straggler to the island.

1012. TETRAX CAMPESTRIS Leach.

Otis tetrax Linn., B. O. U. List, p. 154.

The Little Bustard is a rare winter visitor. Lord Lilford thought he saw a small flock near Famagusta, but was at too great a distance for positive identification. Schrader states that he obtained a single specimen in November.

Müller mentions a young male from the island, and Guillemard heard of the bird being sometimes exposed for sale in the Nicosia market. Mr. T. Greenwood informs me that he has shot examples of this species in winter, on several occasions. Mr. Baxendale obtained two individuals from a party of three close to Papho on December the 18th, 1908, and on January the 1st, 1910, bought a specimen in the Famagusta bazaar. Lord Lilford was informed that the Little Bustard bred in the corn-lands in the island, but, so far as I can ascertain, it is only known to the people in Cyprus as a winter visitor.

1014. HOUBARA MACQUEENI (Gray & Hardw.).

A few years ago a single specimen of Macqueen's Bustard was taken alive in the island and kept for some weeks in captivity by Mr. A. Artemis of Nicosia. I am informed that it was identified by Mr. Templer (then King's Advocate of Cyprus), who was a competent ornithologist. I confess that I should have thought it much more likely to have been *H. undulata* (Jacq.), the Houbara Bustard, which species I should not be at all surprised to find also locally confused with *Otis tarda*.

1015. Œdicnemus scolopax (S. G. Gmel.).

The Stone Curlew is tolerably common in the plains and is, at any rate in some numbers, resident.

Sibthorp obtained it in May; Lord Lilford found it common in all suitable localities during his visit and believed it to be a permanent resident: Schrader states that it can be found singly throughout the year: Müller mentions a male taken in January; Guillemard met with it in May and June; Glaszner at the end of August. Mr. Baxendale has had it under his observation in the Papho district during practically the entire year, and I have had specimens sent to me in March from Athalassa and in May also from the Nicosia neighbourhood. Mr. G. F. Wilson, who has frequently shot it, tells me that he has met with it in August, September, and January, and that young birds have been obtained in August, so that there is little doubt as to its breeding locally. It was also noticed by Horsbrugh in May, and he saw a flock of about twenty at Famagusta on January the 13th, 1910.

1016. Glareola pratincola (Linn.).

Probably the "birds not unlike plovers," which appeared upon the procession of the holy picture from the Kykko monastery and "swooping down upon the locusts devoured great quantity," as mentioned by Cornelis van Bruyn, a Dutchman who visited Cyprus in 1683, were Pratincoles. Van Bruyn states that these birds "had never been seen before nor were ever seen again, but the Pasha had forbidden them to be killed, under pain of death."

Sibthorp, who includes this species in his list, speaks of it in his Journal as a summer visitor. Lord Lilford found it very abundant about the beginning of May and stated that he felt no doubt that it bred in the island. Schrader states that it occurs in small flocks at the migration seasons only. Guillemard met with numbers at Morphou towards the end of May 1887. Glaszner does not appear to have sent it to Madarász. None of our party came across this bird in the spring of 1909, but, though it can no longer count on finding flights of locusts in Cyprus, the island is well within its summer range, and I should expect to find it a more or less regular summer visitor.

1020. Charadrius pluvialis Linn.

The Golden Plover seems to have been recorded hitherto only by Guillemard, who mentions obtaining it at Avgasida marsh in early March, 1888.

As a fact this species is a tolerably common winter visitor and well known to all local sportsmen. According to Mr. G. F. Wilson the Golden Plover seems to arrive slightly before the Lapwing and stays a little later. It appears about the beginning of November and often consorts with the flocks of the Lapwing: it leaves the island in the early part of March. On November the 15th, 1908, I saw a small flock of about twenty individuals near the river, close to Nicosia, and on December the 19th, 1908, and January the 10th, 1909, Mr. G. F. Wilson kindly brought me male specimens in the flesh, which he had obtained when shooting in the same neighbourhood. He regards it as nearly as common as *Vanellus vulgaris*. This winter (1909–10) I purchased a dozen or more at different times in the Nicosia bazaar.

1022. Squatarola helvetica (Linn.).

Sibthorp included in his list *Tringa varia*, which is certainly a Linnæan name for the Grey Plover, but it was omitted by Unger and Kotschy, and does not seem to have been recorded by any other observer hitherto.

According to Mr. G. F. Wilson the Grey Plover is a rare winter visitor: he has, in the course of several years, only obtained it twice, namely on December the 20th, 1903, and December the 1st, 1907—on both occasions near Nicosia.

1024. Ægialitis geoffroyi (Wagl.).

The only definite records in Cyprus of the Greater Sand-Plover of which I am aware are by Guillemard, who shot a male commencing to assume summer plumage at the Limassol salt-lake on March the 10th, 1887, out of a small flock of six or seven birds, and by Mr. Baxendale, who shot a female near Famagusta on March the 11th, 1910.

1028. Ægialitis cantiana (Lath.).

The Kentish Plover was first noticed by Lord Lilford, who found it more or less abundant and states that it breeds in Cyprus. Schrader wrote of it as an uncommon winter visitor. Guillemard met with it at the end of April near Famagusta, and Glaszner sent to Madarász three examples taken in January and March. Horsbrugh obtained a specimen at Acheritou on April the 9th, 1909, and Mr. Baxendale another at Famagusta on January the 12th, 1910.

Lord Lilford thought that this species was perhaps more abundant than either of the two following. It is probably a resident.

1029. Ægialitis hiaticola (Linn.).

The Ringed Plover was included by Sibthorp in his list, and Lord Lilford found it at the time of his visit more or less frequently. Schrader speaks of it as a winter visitor. Guillemard met with this species at the Limassol salt-lake in early March, near Famagusta at the end of April, and near Larnaca at the end of January. Glaszner has taken it in the latter month, and also in September.

Horsbrugh obtained it at the reservoirs at the end of March, and he and Mr. Baxendale shot several in the Papho district between the 19th and 24th of May, 1909. It is a spring and autumn migrant and a winter visitor.

1032. Ægialitis curonica (Gmel.).

Lord Lilford discovered the Little Ringed Plover more or less frequently during his visit, and Müller records an adult male obtained in spring. Guillemard met with it at the Limassol salt-lake in early March, and on the 26th of April near Famagusta. Glaszner sent Madarász specimens obtained near Larnaca in March and April. Mr. Baxendale obtained the bird at Papho in May 1909. It is certainly a visitor on its migrations, and perhaps a partial resident.

1035. Eudromias morinellus (Linn.).

I am pleased to be able to add the Dotterel to the Cypriote list. I bought a single female along with five Golden Plovers on December the 15th, 1909, in the Nicosia bazaar, for twenty piastres.

1037. Hoplopterus spinosus (Linn.).

The Spur-winged Plover was met with by Sibthorp, who mentions in his Journal having shot a specimen flying near his vessel when lying off the island in early April (1787). Lord Lilford obtained one example near Limassol—out of the only two seen by him during his visit—on May the 8th. Pearse obtained specimens: Schrader states that he only procured one and that in November: and Müller records a single immature example. Guillemard seems to have but once met with the bird, shooting it at Avgasida marsh in early March. Glaszner obtained a male on April the 10th, 1902. It is known to Mr. Nicolls and other English sportsmen; and Horsbrugh came across a few at the Acheritou reservoir between the 24th of March and the 10th of April, 1909, and obtained several specimens. Mr. Nicolls states that, in some seasons, when the height of the water has been favourable, it has nested at the reservoirs. It is anyhow a spring and autumn migrant.

1042. Vanellus vulgaris Bechst.

Schrader states that the Lapwing occurred in winter in small flocks; but Guillemard, though he met with one flock between Nicosia and Larnaca at the end of February, 1887, and two or three large flights near Famagusta at the end of January in the following year, does not seem to have thought it very common. Glaszner has obtained a few in the latter month. The Lapwing, at the present time, is an abundant winter visitor, arriving towards the middle of November (though some are occasionally noticed in October) and leaving towards the middle of March. It is well known to all the local sportsmen, while I have met with it in considerable numbers in the cold weather on marshy ground in all parts of the island, and have shot several specimens.

1044. Hæmatopus ostralegus Linn.

Sibthorp in his Journal mentions that on April the 17th

(1787) he shot on the beach near Armidia (Ormidhia, not far from Larnaca) a bird of this species. This is the only record of the Oyster-catcher in Cyprus with which I am acquainted. The species has been included hitherto by the other writers solely on account of its mention in Unger and Kotschy's list, doubtless copied from Sibthorp. The origin of the record is as given above.

1046. Recurvirostra avocetta Linn.

The Avocet is another pleasing addition to the Cypriote list. A pair were seen at Larnaca salt-lake at the end of December 1909, and a male bird captured was kindly sent to me alive by Mr. W. J. Ansell, I.S.O.

1047. Himantopus candidus Bonnat.

The Black-winged Stilt was another species included by Sibthorp in his list. Lord Lilford found it common in May about the freshwater marshes, and Guillemard met with it in some numbers near Larnaca in early April, 1887, and near Famagusta at the end of May, 1888.

It seems to have been accidentally omitted by Madarász from his paper, 'Ueber die Vögel Cyperns.'

The Black-winged Stilt is a regular visitor on the spring and autumn migrations, and would no doubt nest in the island every summer if conditions were suitable. Mr. Nicolls informs me that since 1904 he has seen these birds every spring at the Acheritou reservoir, sometimes in fair numbers, *i. e.* ten or a dozen pairs. Once or twice—notably in 1905—when the water was maintained at a height which exposed several small islets, they bred in company with a few pairs of the Common and Lesser Terns and of the Spur-winged Plover. In May 1905, Mr. Nicolls collected there a number of eggs, two of which are now in the possession of the Cyprus Natural History Society. In the spring of 1909 Horsbrugh found the Stilt in plenty at Acheritou, from the 23rd of March till the 5th of April, and obtained a good series. There were probably thirty pairs, but they were seen in flocks of from six to twenty or thirty individuals: they did not nest, as the water was practically all drained off by early May.

I have no definite note of the date of the return migration, nor have I heard of the bird being observed in winter.

1050. SCOLOPAX RUSTICULA Linn.

The Woodcock is an abundant winter visitor. Mariti (1760–71) writes of it as one of the commonest birds in the island and much prized for food. In 1814 an officer in the East India Company's Service visited the island in January and writes of its abundance. It was not met with by Sibthorp, as at the time of his visit it would have gone north, and consequently its name did not appear in Unger and Kotschy's list, nor does Müller mention it, though Schrader speaks of it as a fairly common winter visitor. It was of course not seen by Lord Lilford, but he was told that forty couple had been shot in the Papho district by two English officers. No such bag can be expected —at any rate in one day—at the present time, but the bird arrives in considerable numbers at the beginning of November and leaves in early March; bitter weather on the Karamanian mountains, will cause, as a rule, a marked increase in the numbers at any time during the winter. It frequents the wooded hillsides and is often shot close to, or even in the gardens of the towns. In the Karpas, the Papho district, and at Aghirda wood near Nicosia excellent sport may still be had, but ten couple to two guns in a day's march would be the utmost to which any one may reasonably look forward.

1052. GALLINAGO MAJOR (Gmel.).

The Great or Double Snipe is a winter visitor, but is without doubt constantly confused with the Common Snipe. Indeed it does not seem to be, at the present time, known to the local sportsmen. It appears to have been first noticed by Lord Lilford (as the *Scolopax media* Steph. of Unger and Kotschy's list is obviously a substitution for the *Scolopax gallinago* of Sibthorp and is re-rendered by Müller as *Telmatias gallinago* Boie): he procured several specimens near Larnaca in the third week in April. Guillemard obtained others, and found it not uncommon in the marshes near Famagusta as late as the end of May, 1887. No example of this species seems to have been sent to Madarász by Glaszner. Though I have shot a good many Snipe in the island, I have not as yet come across it. On the 26th of January, 1908, Mr. Nicolls and I, together with another gun, obtained 99 Snipe at Morphou marsh, but amongst them there was neither a Great nor a Jack Snipe !

1053. Gallinago cœlestis (Frenzel).

The Common or Single Snipe is a very abundant winter visitor to Cyprus, and is frequently mentioned by writers from the sixteenth century onwards. From a careful series of observations by Mr. G. F. Wilson, and from the experience of myself and others, it is clear that the first Snipe arrive on their southerly migration at the end of August : most of these are birds of passage, but the migration continues, as the weather north becomes colder, until about the end of October or beginning of November, when the marshes are at their best for autumn shooting. Good sport may be enjoyed throughout the winter, particularly when wintry weather on the mainland from time to time drives over a fresh supply of birds. At the end of February and beginning of March the northerly movement takes place, and the spring sport is then at its height. By the end of March the vast majority have gone, but without doubt a few remain during the summer. Mr. Jebb, when stationed near the reservoirs in the summer of 1908, had perhaps a dozen under obsevation throughout the whole of that period, but did not find a nest. Fifty couple to two guns in a day is the Snipe shooter's ambition in Cyprus, but I am not sure that it has been quite attained.

1058. Gallinago gallinula (Linn.).

Limnocryptes gallinula, B. O. U. List, p. 167.

The Jack Snipe is a common winter visitor, but not so abundant as the preceding species. It does not, however. arrive till the end of October or beginning of November, and has, as a rule, left by the middle or end of March, though, of course, individuals are occasionally met with in April. Guillemard, on the only occasion on which he mentions it, obtained a single specimen on the 16th of that month. It appears to have been first noticed by Lord Lilford, who saw only a few, but Müller suggests that this species was probably intended by the "*Scolopax cyprius*" mentioned in Sibthorp's list and copied by Unger and Kotschy, though for my own part I consider that the Romaic name "Τρολουρίδα τῆς θαλάσσης" given by Sibthorp certainly does not refer to this bird, but more probably to Sandpipers generally. The proportion of Jack to Common Snipe which is obtained when shooting varies very much: on November the 16th, 1907, out of twenty-nine birds no less than twenty were Jacks; on January the 26th, 1908, out of ninty-nine there was not one; on December the 7th, 1908, out of seventeen only two.

1065. TRINGA ALPINA Linn.

The Dunlin was in Sibthorp's list. Lord Lilford found it in small numbers on the sandy shores near Famagusta and Limassol in April and May. Schrader states that it is a winter visitor. Guillemard obtained it near Famagusta in the middle of May, 1888, and Glaszner sent six examples to Madarász, obtained near Larnaca in September, November, and December. It is a spring and autumn migrant and winter visitor.

1067. TRINGA MINUTA Leisl.

The Little Stint is a visitor on its spring and autumn migrations and probably a few birds remain in the island in the winter. Schrader refers to it as a winter visitor; Pearse obtained a female at Larnaca on October the 1st, 1878; Müller records three adult males procured on January the 4th, February the 9th, and February the 23rd; Guillemard took one near Famagusta on May the 21st, 1888; Glaszner a female near Larnaca on October the 28th, 1901; Mr. Baxendale and Horsbrugh each shot a specimen near Kouklia (Papho district) on May the 23rd, 1909; and Mr. G. F. Wilson shot two males and one female on October the 10th in the same year near Nicosia.

1072. TRINGA SUBARQUATA (Güld.).

The Curlew Sandpiper or Pigmy Curlew was one of Unger and Kotschy's additions to Sibthorp's list, but was possibly intended to represent the latter's *Tringa varia*, as those writers omit the Grey Plover, and "*Ærolia varia*" Vieill. was then a recognised synonym for the species now under consideration. However, the Curlew Sandpiper was not met with again until Glaszner sent Madarász two females taken near Larnaca on September the 2nd, 1902. I shot a male in winter plumage in Morphou marsh on December the 12th, 1908; Horsbrugh obtained another in full breeding dress on May the 20th, 1909, and Mr. Baxendale a female on the 24th of the same month, both not far from Papho. This species is no doubt a visitor at the seasons of migration, and a few individuals remain in the island during the winter.

1078. CALIDRIS ARENARIA (Linn.).

Pearse sent Lord Lilford a male of this bird in winter plumage taken near Larnaca on October the 1st, 1888. I know of no other record.

1080. MACHETES PUGNAX (Linn.).

The Ruff was included in Sibthorp's list. Lord Lilford speaks of it as not uncommon on the vernal migration, and Guillemard met with it on both his visits; at the end of March, 1887, he obtained a male in immature or non-breeding plumage near Limassol out of a small flock of eight or ten, while he secured a specimen at Kouklia marsh on February the 27th, 1888, and a male in full breeding plumage on May the the 20th near Larnaca. Glaszner sent to Madarász a female from near the latter place, shot on March the 7th, 1901.

The edges of the Famagusta reservoirs are evidently a favourite resort of this bird, as Horsbrugh in 1909 found it quite abundant there from the 23rd of March till he left the vicinity on April the 8th. He obtained a good many specimens, and on March the 24th saw at Acheritou a flock of quite sixty. None of the birds which he obtained exhibited more than slight traces of breeding plumage. The Ruff is evidently a fairly common visitor in spring and autumn.

1083. TOTANUS CALIDRIS (Linn.).

The Redshank was included by Sibthorp in his list, but was apparently omitted by Unger and Kotschy.

Lord Lilford found it exceedingly common in April 1875, especially near the Larnaca salt-lakes. Schrader writes of it as a winter visitor. Guillemard only mentions it once, when he met with a stray specimen near Limassol in early March, 1887. Glaszner sent Madarász a female taken on November the 5th, 1903, near Larnaca. The Redshank is, I believe, not at all uncommon in winter and at the seasons of migration, and I think forms no small proportion of the flocks of Waders sometimes observed near the reservoirs. Mr. Nicolls informs me that he has shot the bird more than once in the island. Mr. Baxendale obtained a female from Acheritou on January the 12th, 1910, and a few days later Horsbrugh met with several individuals at the Larnaca salt-lake.

1084. TOTANUS FUSCUS (Linn.).

A female Spotted Redshank was shot by Lord Lilford in a marsh near Larnaca on April the 21st, 1875. Mr. Baxendale shot a female near Famagusta on March the 11th, 1910. I know of no other local records. This is, no doubt, an uncommon spring and autumn migrant but it is easily overlooked.

1085. TOTANUS GLOTTIS Naum.

Totanus canescens, B. O. U. List, p. 177.

Lord Lilford found the Greenshank not uncommon in the swampy plains westward of Salamis in April—not in flocks but singly or in couples—probably pairs. Apparently, either Pearse or Guillemard obtained specimens, but the latter does not mention the species in his 'Ibis' articles. Mr. G. F. Wilson shot a male at Pyroi, near Nicosia, on October the 3rd, 1909. No doubt it is solely a visitor in spring and autumn, a few, perhaps, wintering in the island.

1087. TOTANUS STAGNATILIS Bechst.

As "*Totanus stagnalis* (!) Bechst." the Marsh-Sandpiper is one of Unger and Kotschy's additions to Sibthorp's list; but there are, of course, no data given. However, Lord Lilford received, without particulars, through Guillemard, in January 1889, a single specimen which had been obtained by or through Captain (now Sir Arthur) Young, at that time

Commissioner of Famagusta, and Glaszner sent a female to Madarász taken near Larnaca on April the 20th, 1903. I have no knowledge of any other occurrences, but assume that the bird is an occasional spring and autumn migrant.

1089. Totanus ochropus (Linn.).

Helodromas ochropus, B. O. U. List, p. 174.

Lord Lilford met with the Green Sandpiper frequently, on muddy ground, in April and May. Guillemard mentions obtaining a specimen towards the end of February, 1887, near Famagusta, and, according to Lord Lilford, brought back others shot in March on both his visits. Mr. G. F. Wilson shot a male at Pyroi on September the 26th, 1910. It is, no doubt, only a visitor on migration and in winter.

1091. Totanus glareola (Gmel.).

Lord Lilford found the Wood Sandpiper common in May, particularly near Limassol, and observed a pair which he was convinced had a nest. Schrader mentions meeting with it in January and speaks of it as common. Guillemard does not mention it in his 'Ibis' papers, but either he or Pearse seems from Lord Lilford's account to have obtained it. Glaszner sent Madarász two specimens taken in early April near Larnaca, and Horsbrugh obtained a female near Papho on May the 20th, 1909. I am inclined to think that this species is only a visitor in winter and on the migrations.

1092. Totanus hypoleucus (Linn.).

Tringoides hypoleucus, B. O. U. List, p. 173.

Lord Lilford found the Summer Snipe or Common Sandpiper very frequently in April and May on almost all parts of the coast visited by him. Guillemard does not refer to it, but he or Pearse seems to have obtained the bird. Glaszner does not appear to have sent it to Madarász. Mr. Baxendale, Horsbrugh and I have met with it fairly often. I obtained a male at Acheritou on January the 15th, 1908; Mr. Baxendale another at Papho on October the 11th; from May the 2nd to May the 20th, 1909, we obtained several specimens both near Nicosia and in the Papho district. It is probably only a visitor on the migrations and in winter.

1101. LIMOSA BELGICA (Gmel.).

Limosa ægocephala, B. O. U. List, p. 178.

Lord Lilford felt little doubt that he had seen the Black-tailed Godwit near Famagusta, but was unable to identify it positively. Schrader states that it is a winter visitor. Guillemard in early March, 1888, obtained specimens on the marsh (now a reservoir) at Kouklia between Nicosia and Famagusta. Horsbrugh obtained a female in partial breeding plumage on the bank of the same place on April the 8th, 1909. It is, no doubt, a visitor at the migratory seasons and perhaps in winter.

1104. NUMENIUS PHÆOPUS (Linn.).

Guillemard mentions meeting with "a species of Whimbrel" near Famagusta on the 26th of April, 1887, and obtained a "Whimbrel" at Kouklia marsh on the 26th of February, 1888, but it was unfortunately eaten by a cat! Though there seems no reason why this species should not occur on migration or in winter in the island, Lord Lilford thought it probable that the bird obtained by Guillemard was *N. tenuirostris.*

1106. NUMENIUS TENUIROSTRIS Vieill.

The Slender-billed Curlew is no doubt a regular visitor at the migrations and probably in winter. Lord Lilford saw, during his visit, great numbers of birds, which he took to belong to this species, near Larnaca and Limassol, but was never able to approach them closely enough for absolute certainty of identification. Sir Samuel Baker mentions that on his visit in 1880 he shot a "small species of Curlew."

1107. NUMENIUS ARQUATA (Linn.).

Numenius arquata, B. O. U. List, p. 179.

The Common Curlew was included in Sibthorp's list and was observed in great numbers by Lord Lilford in April at the Limassol salt-lake, and later in other localities. Schrader states that it arrives at the beginning of September and stays till the end of February, and there is no doubt that it is a regular visitor on the migrations and in winter. I saw numbers of Curlews when shooting at Morphou marsh on January the 26th, 1908, and also on the ooze beds in Famagusta Harbour on January the 29th, 1909, while the bird is well known to the English sportsmen. Mr. Jebb recorded its first arrival at the reservoirs on September the 4th, 1908; Mr. Bovill observed several near Salamis in mid-November of the same year. Horsbrugh on the 30th of March, 1909, saw about a dozen at Kouklia reservoir, and three on April the 5th at Acheritou. On January the 13th, 1910, Mr. Baxendale saw seven near Famagusta, and on the following day a male was brought in to him by a native sportsman which I personally identified. I have no doubt whatever that the birds seen by myself and Horsbrugh were not *N. tenuirostris.*

1110. HYDROCHELIDON NIGRA (Linn.).

Schrader states that the Black Tern may be seen on its autumnal migration. Guillemard observed it, apparently in some abundance, near Famagusta towards the end of May, 1888, and obtained it there. I know of no other record, and the bird is probably only a visitor on passage.

1111. HYDROCHELIDON LEUCOPTERA (Schinz).

Lord Lilford found the White-winged Black Tern very abundant, arriving about the middle of May: he first noticed it near Papho, while Guillemard found it common near Famagusta in 1888. Glaszner sent to Madarász a specimen taken near Larnaca on May the 19th, 1901, and Mr. Baxendale shot another on June the 13th, 1909, near Papho. It is, so far as has been at present ascertained, only a visitor to Cyprus on migration.

1114. STERNA FLUVIATILIS Naum.

Lord Lilford found the Common Tern not uncommon on the coast in the Famagusta district in April and May, and Guillemard obtained it in mid-February, 1888.

I met with this species in fair numbers at Acheritou reservoir on January the 25th, 1908, and Mr. Nicolls, in May 1905, found it nesting at that place and took the eggs.

It is evidently to be found round and on the island at all seasons of the year, but chiefly at the times of migration.

1119. STERNA CASPIA Pall.

Lord Lilford identified two Caspian Terns near Limassol early in May, 1875, and had little doubt that he had seen the species elsewhere on the coast on other occasions. Guillemard saw it near Famagusta on April the 26th, 1887, and Horsbrugh observed a pair at Acheritou reservoir on April the 9th, 1909. So far, it only appears to have been noticed at the migration seasons.

1121. STERNA ANGLICA Montagu.

The Gull-billed Tern is stated by Schrader to occur on the autumnal migration. This is not at all improbable, though the species has not been recorded by any other observer.

1122. STERNA MINUTA Linn.

The Little Tern is the only Tern mentioned by Sibthorp. Lord Lilford found it not uncommon on the sea-coast near Famagusta and Salamis in April and May, and Guillemard on the 26th of the former month obtained it in the same neighbourhood. Mr. Nicolls found a few pairs nesting in May 1905 at Acheritou reservoir, and obtained the eggs; but in that summer the state of the water there was exceptionally favorable for the nidification of aquatic birds, and this Tern is evidently usually only a visitor at the migrations and, perhaps, in winter.

1133. LARUS RIDIBUNDUS Linn.

The Black-headed Gull was mentioned by Sibthorp, but was not observed by Lord Lilford or his collectors. Schrader met with it, apparently commonly, in October. Müller mentions four examples (one adult male and three females) taken on December the 16th and 17th, and on February the 1st and 14th respectively. Glaszner sent two females to Madarász, obtained near Larnaca on February the 2nd, 1901, and November the 19th, 1902. So far as I am aware, the bird is only a winter visitor.

1135. Larus melanocephalus Natterer.

The Adriatic Gull was frequently seen and heard by Lord Lilford between April the 16th and 21st near Larnaca, and on the 22nd a vast flock of some thousands were found by him at Famagusta in the inner harbour, more being met with higher up the coast on the following day; they were not, however, seen again. Schrader states that he only saw a single specimen. Guillemard came across an enormous pack between Larnaca and Famagusta in mid-April, 1887, and rather later in the month observed the bird at Famagusta. Lord Lilford judged, no doubt correctly, that this species was merely a passing visitor to Cyprus on migration.

1139. Larus minutus Pall.

The Little Gull was included in Sibthorp's list, but omitted by Unger and Kotschy in theirs. Schrader writes that he, on one occasion in winter, saw a few on a small lake near Larnaca. Guillemard, who makes no reference to this species in his 'Ibis' papers, brought Lord Lilford two females in immature plumage, obtained on February the 13th and 22nd, 1888, at Famagusta and Kouklia marsh respectively. It is a winter visitor only.

1140. Larus canus Linn.

The Common Gull was recorded by Sibthorp, but does not seem to have been met with by Lord Lilford or his collectors. Müller, however, records an adult male obtained on January the 30th, and Glaszner sent Madarász six specimens taken in the same month. It is a winter visitor only.

1141. Larus gelastes Thienem.

The name of the Slender-billed Gull was included by Guillemard in the rough list prepared for Lord Lilford's use, but the former does not mention the species in his 'Ibis' papers, and did not obtain a specimen.

I am not aware of any other record from Cyprus.

1145. Subsp. Larus cachinnans Pall.

The Yellow-legged Herring Gull was often met with by

Lord Lilford, though he did not regard it as abundant. Müller mentions the receipt of five clutches of the eggs of this bird taken on April the 28th, and states that, according to the collector, the species built on the roofs of houses! Guillemard refers to having seen it near Limassol in January, 1888, and Madarász, who makes a mistake in writing that the species was ignored by Lord Lilford, received several examples from Glaszner, obtained in September and January. In our experience the coasts of Cyprus are singularly devoid of Terns and Gulls, but this species may usually be noticed, and I have no doubt that it breeds in a few localities and that some birds are resident. I have notes of its occurrence on various parts of the coast and at the reservoirs in January, February, April, and May; on the 6th of May, 1909, I received an adult male from Acheritou; Horsbrugh found the bird, evidently nesting, in small numbers at Kyrenia at the end of April, and near Papho in the middle of May, and in February 1910 obtained several specimens at Limassol.

I have never personally heard of its building its nest on house-tops, as mentioned by Müller.

1147. LARUS FUSCUS Linn.

The Lesser Black-backed Gull was found commonly by Lord Lilford on the coasts in April and May, and all the specimens seen and obtained by him and his collectors—though the bird is not mentioned by Guillemard in his 'Ibis' papers—were in full adult plumage. Glaszner sent Madarász an old female, assuming breeding plumage, obtained at Larnaca on April the 2nd, 1902. There is no reason why this bird should not be a resident in Cyprus and it very likely is so, but I am not aware of its having as yet been actually found nesting in the island.

1150. LARUS MARINUS Linn.

The Greater Black-backed Gull was included in Sibthorp's list. Guillemard noted in the rough list referred to previously the words "adult, Famagusta Lake."

I know of no other record, and in any case it is only likely to be a rare winter visitor.

1158. Procellaria pelagica Linn.

Glaszner sent to Madarász a single male obtained near Larnaca on March the 13th, 1903. This is the only record I know of from Cypriote waters.

1168. Subsp. Puffinus yelkouanus (Acerbi).

Sibthorp includes in his list *Procellaria puffinus*, which is, of course, a Shearwater. Unger and Kotschy omit Sibthorp's name, but insert *Puffinus major* Faber, which is the Great Shearwater. It is possible, however, that the later authors intended to refer to *P. major* Hewitson, nec Temm., a synonym of *P. kuhli* Boie—the Mediterranean Shearwater. In any case the Shearwater referred to by Sibthorp no doubt belonged to the form *P. yelkouanus*.

Lord Lilford noticed some numbers of a small Shearwater, which he did not definitely identify, off the west coast of Cyprus in May 1875, and, as Madarász points out, these, without doubt, would be *P. yelkouanus*.

[1169. Puffinus gravis (O'Reilly).

The Great Shearwater is undoubtedly referred to by Unger and Kotschy in their list as *P. major* Faber, but the name must be either a complete mistake or explicable as referable to the preceding species. The Great Shearwater has no business in Cyprus waters.]

1171. Puffinus kuhli (Boie).

The Mediterranean Shearwater was, possibly, incorrectly referred to in Unger and Kotschy's list under the name *P. major* Faber.

Lord Lilford observed a large Shearwater once or twice off the south coast of the island; there can be little doubt that it belonged to this species.

1215. Podicipes auritus (Linn.).

Sibthorp included this species in his list under the designation *Colymbus auritus*, but, as that Linnæan name might have meant either the Sclavonian or the Eared Grebe, it is impossible to say definitely to which species he intended to refer. Unger and Kotschy, however, gratuitously omit the species altogether and, if Sibthorp referred to the former of the two birds, there is, so far as I am aware, no other record of it from Cyprus. Having been omitted by Unger and Kotschy from their list, it was, consequently, never mentioned by any of the later writers.

1216. Podicipes nigricollis E. L. Brehm.

Subject to what has been stated with regard to the preceding species, there has hitherto been no record of the Eared or Black-necked Grebe from Cyprus. However, since the establishment of the large freshwater reservoirs, Mr. Nicolls has been aware that a large Grebe frequented these waters. Horsbrugh, on his visit to the reservoirs, at the end of March and beginning of April, 1909, found this species in some numbers, both at Acheritou and Kouklia, and obtained several specimens, none of which, however, shewed any but the slightest trace of breeding plumage. From the latter place he sent to me at Nicosia a male which lived for some time on a large tank in my garden. When the water was drained off at Acheritou towards the end of April, all the water-birds, of course, left; but I have no doubt that at Kouklia reservoir, which is more reedy, and is emptied later than Acheritou, this species would nest, provided that the conditions remained suitable. Indeed, I found, on visiting Kouklia on December 27th, that quite a large number of these Grebes were on the water and had evidently, from what Mr. Nicolls tells me, been there the whole winter. I counted over twenty. I think that this may be regarded as a "would-be" resident, and no doubt is to be found on the reservoirs so long as there is ample water.

1217. Podicipes fluviatilis (Tunstall).

Tachybaptes fluviatilis, B. O. U. List, p. 204.

Schrader states that the Little Grebe is a rare winter visitor, and Guillemard also regarded it as a rarity, only obtaining one specimen on April the 26th, 1887, near Famagusta, and another in mid-March, 1888, at Avgasida marsh. Glaszner sent a male to Madarász, taken near Larnaca on October the 1st, 1901. The freshwater reservoirs have, however, provided a new and ideal resort for this species in the island, and in the spring of 1901, from the 23rd of March till the 9th of April, Horsbrugh found numbers (perhaps fifty or sixty in all) at both Acheritou and Kouklia. He obtained several specimens —one alive, which I kept on the large tank in my garden at Nicosia for some time, till it sought less safety in flight.

At Acheritou the birds began to nest about the 6th of April, but I heard later that owing to the drainage of the water they all left about the beginning of May. This species may not unfairly be regarded as a partial resident, its migration being due, in a large degree, to adverse local conditions. In January 1910, I observed numbers at Kouklia and on the freshwater lake near Famagusta, and in February Horsbrugh also met with the bird at the Limassol salt-lake.

ADDENDA.

Six of the species tabled below are included by Schrader in his paper in the 'Ornithologisches Jahrbuch' (December, 1891), but have never been mentioned by any other observer. Amongst the birds seldom recorded from Cyprus Schrader mentions the Hobby, Pallid and Montagu's Harriers, Barn Owl, Rose-coloured Pastor, Blue Titmouse (probably in error), Palestine Bulbul, Redwing, Ortolan, and Greenfinch.

158. HYPOLAIS OLIVETORUM (Strickl.).

It is stated by Schrader that the Olive-tree Warbler comes to the gardens at the beginning of April, but is much rarer than *H. pallida*, the Olivaceous Warbler. This is possibly a trustworthy record.

219. ACCENTOR MODULARIS (Linn.).

Schrader states that the Hedge-Sparrow is seen singly in winter. No one else has recorded the bird from Cyprus, and I am inclined to think the account is an error.

289. TICHODROMA MURARIA Linn.

Schrader states that he once saw a pair of Wall-Creepers, and obtained one of them on the rocks near the monastery at Stavrovouni in the Larnaca district.

It is hardly possible that any error could be made with regard to this very striking bird and the locality is one well suited to this Creeper's requirements.

338. LANIUS EXCUBITOR Linn.

Schrader states that he observed some specimens of the Great Grey Shrike at the end of August which he thought were on migration. This is probably a mistake and the birds seen by Schrader were more likely to have been *L. minor*, to which Schrader does not refer.

379. MUSCICAPA COLLARIS Bechstein.

Schrader mentions seeing some on April the 14th, 1877.

Horsbrugh obtained a fine male of the White-collared Flycatcher in a small plantation near Famagusta on April the 13th, 1910, and two days later Mr. Baxendale shot a second in his garden at the same place.

529. EMBERIZA CIA Linn.

Schrader writes that the Meadow Bunting arrives about March the 12th and stays till the end of September, but is rare.

This is possibly a correct record.

737. AQUILA CHRYSAËTUS (Linn.).

Schrader writes that he saw the Golden Eagle several times near Papho, but I have little doubt that the species observed was really *A. heliaca*, the Imperial Eagle.

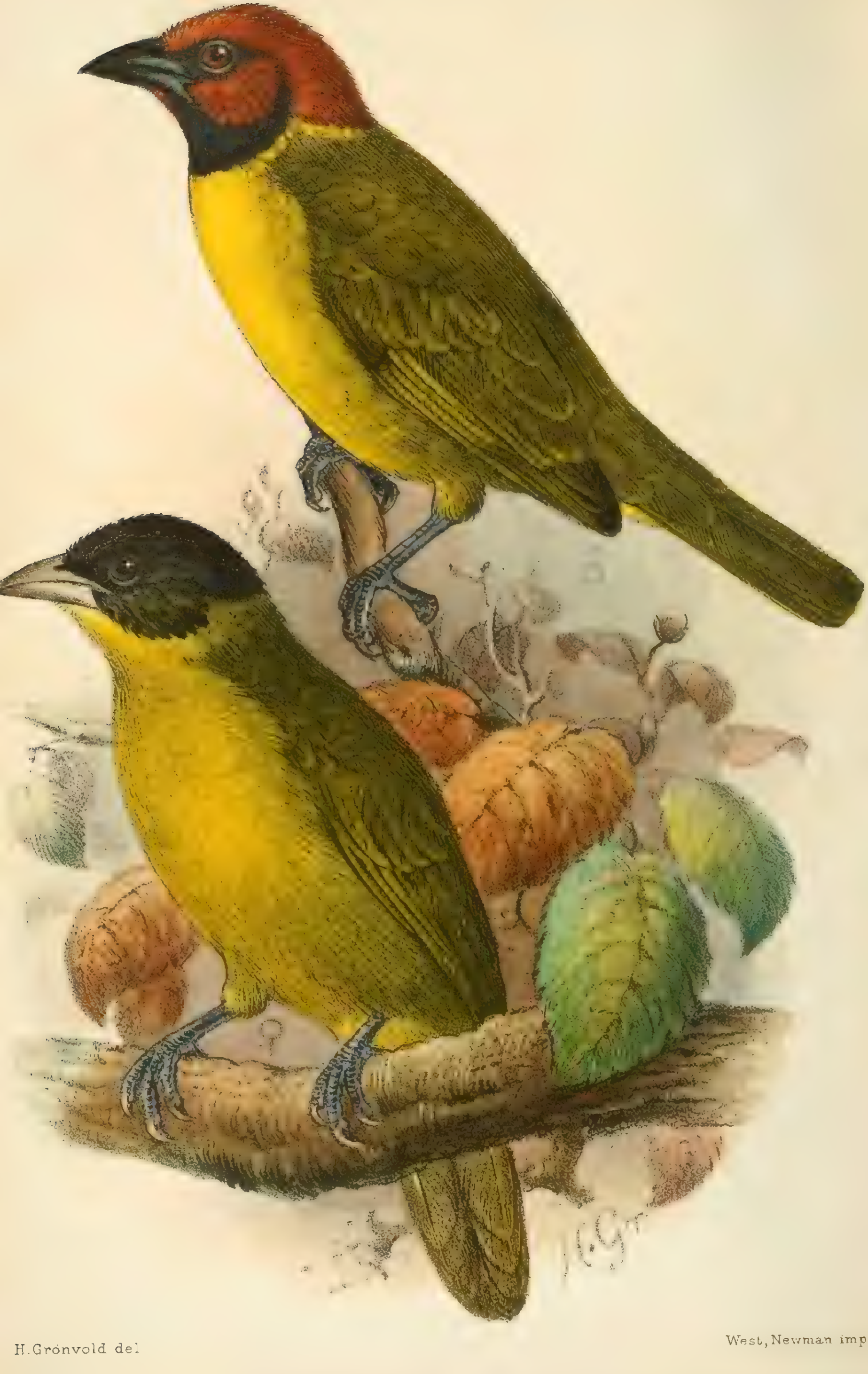
I have also to add:—

94. CYANECULA SUECICA (Linn.).

A pair of Red-spotted Bluethroats frequented the freshwater lake at Famagusta after the end of January 1910. Mr. Baxendale secured the female on March the 27th and the male—a superb specimen—on the 31st. This species is probably a rare winter visitor.

877. ERISMATURA LEUCOCEPHALA (Scop.).

A small party of the White-headed Duck frequented Kouklia reservoir at the end of April, and Mr. Baxendale secured two males on May 4th, 1910, through Mr. A. Douglas.



H. Grönvold del

West, Newman imp.

OTHYPHANTES BATESI ♂ & ♀.

1213. Podicipes cristatus (Linn.).

At least six pairs of Great Crested Grebes nested this spring on Kouklia reservoir. I obtained the first eggs on May the 6th from Mr. A. Douglas.

XIX.—*Note on a rare Weaver-bird* (Othyphantes batesi).

By W. R. Ogilvie-Grant, M.B.O.U.

(Plate VI.)

This very handsome species of Weaver-bird was described by the late Dr. Bowdler Sharpe as *Othyphantes batesi* from a female procured by Mr. G. L. Bates on the River Ja, Cameroon (*cf.* Ibis, 1908, p. 348). The type-specimen, which bears the collector's number 1372, has the cheeks olive-yellow mixed with black, and is evidently not quite mature. Subsequently the same collector forwarded to the British Museum an adult male bird, shot at Kumangola, River Ja, which he believed to be referable to the same species, and Dr. Sharpe exhibited it as such [*cf.* Bull. B. O. C. xxv. p. 41 (1909)].

Mr. Bates's description is as follows :—

"*Adult male.*—Somewhat resembles the male of *Sitagra brachyptera* (Swains.), from which it differs chiefly in having the crown and entire sides of the head chestnut and in lacking the black patch behind the eye, while the upper parts are darker olive-green. The chin is chestnut and the yellow of the under parts commences directly below the black throat. Iris dark brown ; bill black ; feet bluish-grey. Total length about 5·5 inches ; culmen 0·7 ; wing 2·85 ; tail 1·85 ; tarsus 0·75.

"*Hab.* River Ja, Cameroon, 17th November, 1908."

The types-pecimen, as already stated, is not quite mature, and Mr. Bates informs us that in the fully adult female the "sides of the head are perfectly black." In the type-specimen the bastard primary is longer than in the adult male and measures 1·05 inch, as compared with 0·7 inch, but this, no doubt, is also a sign of immaturity.

The lower figure in Plate VI. represents the not quite adult female and the upper figure the adult male.

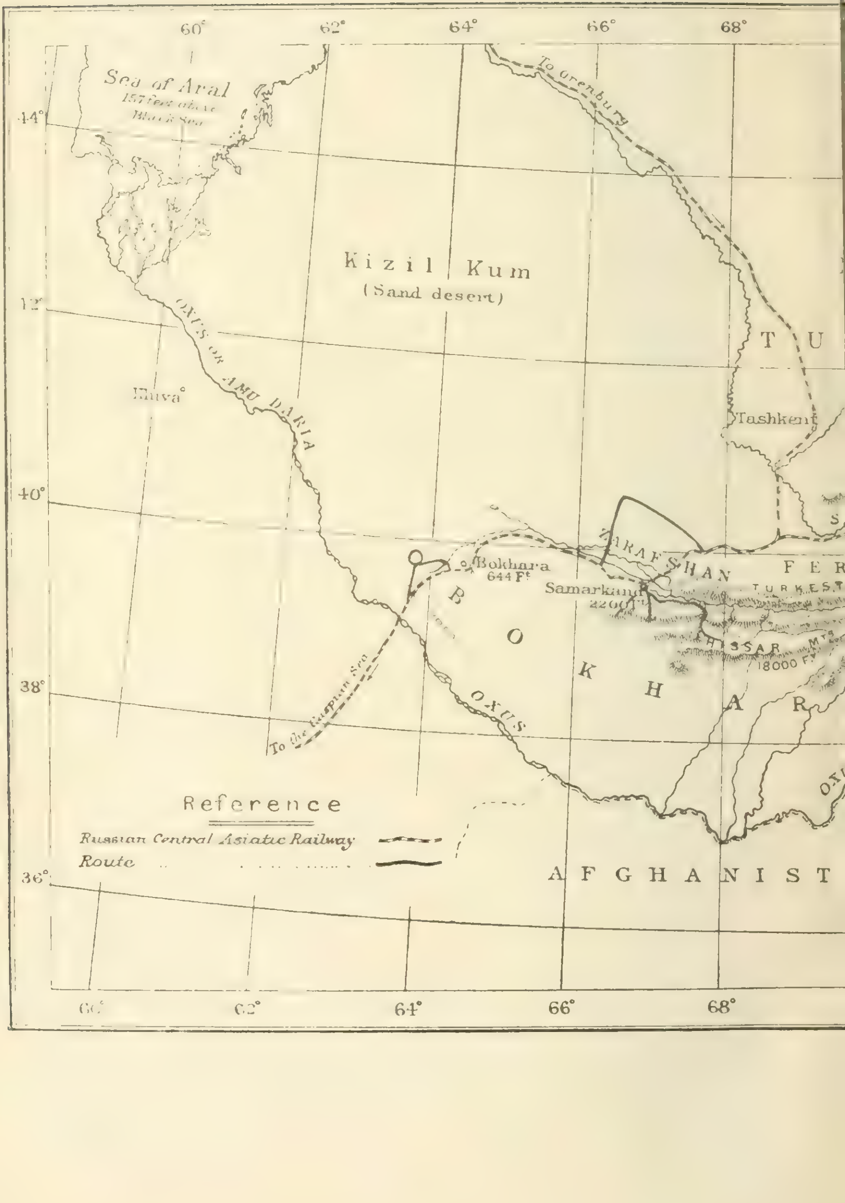
XX.—*On the Birds of the Zarafschan Basin in Russian Turkestan.* By DOUGLAS CARRUTHERS, F.R.G.S., M.B.O.U.

(Plates VII. & VIII.)

THE Russian possessions in Central Asia are very little known to Englishmen, and although a few travellers annually visit the Tian Shan mountains, their object is solely sport. I cannot find that any of them have added to our knowledge of the ornithology, or have made systematic collections of the fauna of that part of Central Asia. The region known, somewhat vaguely, by the name of Russian Turkestan (see Map, Pl. VII.), is situated north of Afghanistan and Chinese Turkestan, being bordered on the west by the Oxus and the Sea of Aral and on the east by Dzungaria, or western Mongolia. In this region I include the "protected native-state" of Bokhara, for it is a part of Russian Turkestan in everything but name.

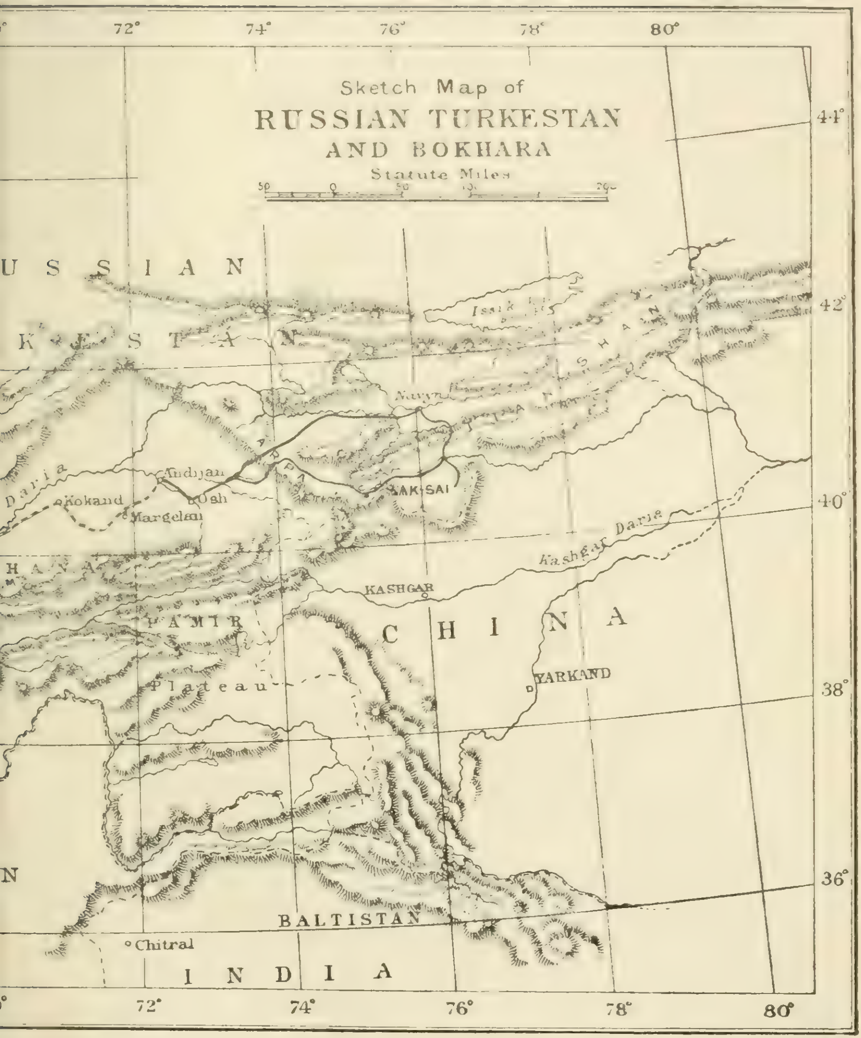
This immense tract of country has been fairly well worked by Russian naturalists, such as Severtzoff, Prjevalsky, Fedchenko, and Zarudny. Their labours, however, seem to have been confined chiefly to Central and North-eastern Turkestan, in the regions most wealthy in bird- and animal-life, such as the forest-covered Tian Shan mountains and their outlying ranges. South-western Turkestan seems to have been somewhat neglected. I find a considerable difference between the fauna of North-western Turkestan and of the South-western district. The whole region might, indeed, be divided into two faunistic zones, namely—Turkestan north of the Syr Daria and the Ferghana, and the district lying south of this boundary, which is composed of the Zarafschan Basin and the Khanate of Bokhara. The former has a typical Central-Asiatic fauna, whilst the fauna of the latter belongs rather to Afghanistan.

As regards the flora the districts are equally distinct. The northern region is remarkable for its luxuriance, its dense forests of conifers, and its heavy rainfall, whilst the southern has a comparatively small rainfall and consequently the vegetation is very poor, except in the oases. Forests



60°
62°
64°
66°
68°
44°
42°
40°
38°
36°
Sea of Aral
157 feet above Black Sea
To Orenburg
Kizil Kum
(Sand desert)
OXUS or AMU DARIA
Khiva
T U
Tashkent
S
ZARAFSHAN
F E R
TURKEST
Bokhara
644 Ft
Samarkand
2200 Ft
B O K H A R
HISSAR MTS
18000 Ft
OXUS
To the Caspian Sea
Reference
Russian Central Asiatic Railway
Route
A F G H A N I S T

IBIS, 1910, Pl. VII.



Sketch Map of
RUSSIAN TURKESTAN
AND BOKHARA

Statute Miles
50
0
50
100
200
72°
74°
76°
78°
80°
44°
42°
40°
38°
36°
USSIAN
KESTAN
Issik Kul
Naryn
SHAN
ARPA
Daria
Kokand
Andijan
Osh
Margelan
AKSAI
Kashgar Daria
HANA
KASHGAR
PAMIR
Plateau
CHINA
YARKAND
BALTISTAN
Chitral
N
INDIA

Leonardson & Co.

are conspicuous by their absence, except for small groves of junipers at a high altitude in the mountains.

When I journeyed out to Turkestan in 1907, I intended to devote a year to this southern district, and to make a collection of birds from the low sandy deserts of Bokhara up to the high ranges that form the western declivities of the Pamirs.

I travelled by way of St. Petersburg, Moscow and Orenburg, through Russian Turkestan to Samarkand. At this town I made my headquarters, for it was situated on the middle portion of the Zarafschan River, and the desert and high mountains were equally within reach of it.

Here I met Mr. W. R. Rickmers, whose knowledge of Bokhara and whose travels in these countries are well known, and with whom I was engaged to travel. But, unluckily, in the end he was unable to accompany me, or to make any long journeys, so that most of my excursions were undertaken alone, and my labours were confined to the Zarafschan Valley. However, by making a systematic collection along the whole course of the Zarafschan I was able to get a very good idea of the ornithology of the whole district.

The Zarafschan is a typical river of Inner Asia. Having its source in the immense glaciers in the mountain-mass north-east of the Pamirs and flowing for two hundred miles through rugged mountain scenery, it at last reaches the open plain. Here, when set free from its mountain-home, it waters a wide valley—the Vale of Samarkand, and further out on the plain it creates the fertile area that surrounds Bokhara. Further still, having been deprived of most of its water for irrigation purposes, it flows on as a little stream into the sand-dunes, forms a swamp, and gradually evaporates. In its whole course it has a length of four hundred miles and its basin is self-contained.

The variety of scenery, of altitude, of climate, and consequently of flora and fauna, that such a valley presents, made it well worth a year's work. The climate is naturally one of extremes, in a region so far removed from the ocean. The winters are exceedingly cold, and bitter winds sweep across the steppes. Spring comes suddenly, and during this season most of the rain falls; in summer the climate is hot, but dry and invigorating.

The yearly rainfall varies from 97·1 mm. near the Sea of Aral to 337·7 mm. at Samarkand. On the high plateaux the rainfall is again very small: the Pamirs have a yearly fall less than that of the Aral basin.

The altitude varies from 200 feet above the sea-level on the Bokharan Steppe to 20,000 feet on the ranges of Eastern Bokhara. But the life-zone ends at about 15,000 feet, which is the height of the average snow-line.

As regards physical features, on the low country we have an area of sand-dunes of the most utter desolation where no life exists, as well as an area of tamarisk and scrub-covered sand-hills and tamarisk-swamp. Above this is the hard steppe which runs from 500 feet up to 4,000 feet. These high steppes are a peculiarity of Asiatic scenery.

The cultivated area is confined to a district between 200 feet and 3,000 feet. Of course cultivation does exist at a higher altitude: orchards are to be seen high up the mountain valleys, and barley is grown as high as 8,000 feet, but the main area, where the large towns are situated and the vast proportion of produce is raised, lies at about 2,000 feet, where the rivers leave the mountains and render irrigation possible. This region includes practically the whole of the tree-area, there being no true forests.

The remaining half of the region is composed of mountain-ranges, very difficult of access. Out of the Bokharan steppes rise the immense ranges of Hissar and Turkestan, which border the Zarafschan on the north and south. The mountains might be divided into three areas—the low, rocky, barren, desert-ranges from 2,000 feet to 6,000 feet, the bush-clad or juniper forest area from 7,000 to 9.500 feet, and lastly the alpine region above 10,000 feet, varying up to 15,000 feet according to the snow-line. The juniper forest is confined to the area between 7,500 feet and 9,500 feet, and holds perhaps the most interesting fauna, the birds being mostly peculiar to the forest-zone and typical of the high mountain-ranges of Central Asia.

A country thus situated midway between the Indian region and Siberia is naturally crossed in spring and autumn by a very large number of migrants. The resident birds in the Zarafschan Valley are comparatively rare; the majority are summer visitors from Afghanistan and India, but of the summer visitors some few go further north to breed, and only pass and repass the Zarafschan Valley. A smaller number still are winter visitors from Siberia. These consist mostly of waders and water-fowl, besides the Grey Crow and the Black-throated Thrush. The strongest wave of migration in spring takes place between the 28th of April and the 5th of May.

Arriving in Samarkand on the 1st September, 1907, I was in time to watch the autumnal migration and to obtain some of the common resident birds. As the winter advanced bird-life became very scarce in the cultivated area along the middle course of the Zarafschan. By the 1st of November the migration was over, and all the summer birds had passed south. The mountain region being closed during the winter, I devoted myself to mammal and bird collecting on the low deserts, west of Bokhara. Here there was a plentiful supply of ducks, geese, and waders, as well as of pheasants. Incredible numbers of wild-fowl assemble on the small lakes of the steppe during the winter, and good shooting is to be had.

Spring came early and with a rush. I met the northern migration at the lowest altitude, making a large collection at 2,000 feet, and then gradually moving up higher as the summer advanced. By doing this I caught all the summer visitors in their breeding haunts. By the middle of May I had finished the desert and the steppe-region, then a month was devoted to the cultivated areas at 2000 feet and the rocky foot-hills up to 7,000 feet. During this month the bulk of my collection was made.

In the middle of June I started work on the high mountains, and made a large collection in the Hissar range which borders the Zarafschan Valley on the south. On this range in the month of June, bird-life did not extend to above 10,000 feet.

After this I made a journey to the plateaux of Arpa and Ak-sai, which are situated between the Pamirs and the Tian Shan. The Pamirs themselves are closed to travellers, and the only other locality that seemed to offer the same conditions and to contain the same fauna was this plateau district, situated north of Kashgar.

However, I did little collecting there, as bird-life was very scarce indeed, and the few birds met with were in full moult. But I saw sufficient to induce me to suppose that immediately north and north-east of the Ferghana and Pamirs, there is a very different fauna.

It is not necessary to give an itinerary, but I may say that I spent twelve months in the valley of the Zarafschan, moving up and down and making collections at the same places in different seasons. The whole series was composed of about 600 specimens, 523 of which have been purchased by the Trustees of the British Museum. These include examples of 147 species. A certain number of large and common birds I did not collect and a few rare ones I saw but never obtained. Notes on these are included as an appendix.

My best thanks are due to Mr. Ogilvie-Grant and Mr. Wells at the Natural History Museum, for their kindness in helping me to work out the collection and in identifying the specimens.

1. CORVUS CORNIX.

Corvus cornix Sharpe, Cat. B. iii. p. 31.

♀. Samarkand. 27 Oct., 1907. No. 126.
♀. ,, 17 Dec., 1907. No. 235.

A winter visitor only. The Hooded Crows arrive in the Zarafschan Valley from the north at the end of October. As the winter advances they increase in numbers, until the first week in April, when they suddenly begin to go north again. By the 10th of April there was not one to be seen anywhere.

2. CORVUS FRUGILEGUS.

Trypanocorax frugilegus Sharpe, Cat. B. iii. p. 9.
♂. Samarkand. 6 Nov., 1907. No. 159.
♀. „ 29 Oct., 1907. No. 142.

A common resident in the cultivated districts, which breeds at 600 ft. above the sea-level in the groves of birch-trees, the nests being sometimes placed only 20 ft. from the ground.

3. CORVUS COLLARIS.

Corvus collaris Sharpe, Cat. B. iii. p. 27.
♂. Samarkand. 10 Sept., 1907. No. 24.
♂. „ 25 April, 1908. No. 382.
♀. „ 22 Dec., 1907. No. 250.

An exceedingly common resident. My specimens evidently belong to the white-collared race of *C. monedula*, but the intensity of the white on the collar is very variable.

4. PICA LEUCOPTERA.

Pica leucoptera Sharpe, Cat. B. iii. p. 66.
♂. Samarkand. 11 Oct., 1907. No. 63.
♀. „ „ „ No. 62.
♀. „ 7 Oct., 1907. No. 57.

This is one of the commonest and most conspicuous birds in Turkestan. All over the cultivated districts, from 300 ft. up to 3000 ft., it is very numerous; at a higher altitude it becomes scarce. But I have seen it right up to the snow-line at 10,000 ft. in June, and it has been recorded on the Pamirs by Severtzoff. In habits it is very different from the European Magpie, the Turkestan bird being very tame and confiding, and always to be seen amongst the native houses and even in the bazaars of the towns.

They breed early; the young being fully fledged on the 30th May.

The amount of white on the wings, by which this bird is distinguished from *P. rustica*, is very variable. No. 57 has much white, there not being more than 0·2 in. of black at the tips of the quills, while Nos. 62 and 63 have as much as 0·5 in. and 0·6 in. of black at the tips, with a correspondingly less amount of white.

5. PYRRHOCORAX ALPINUS.

Pyrrhocorax alpinus Sharpe, Cat. B. iii. p. 149.

♂. Hissar Mts. 24 June, 1908. Nos. 602, 603.
♀. „ „ „ No. 601.

The Alpine Chough is very common at 9000 ft. in the Hissar Mts., but was never seen below 8000 ft.

Severtzoff mentions that the Common Chough (*P. graculus*) is found in this district and in the Pamirs, but I never came across it. The northern range of *P. alpinus* is terminated by the Tian Shan Mts., but *P. graculus* extends further north into Siberia.

6. STURNUS PURPURASCENS.

Sturnus purpurascens Sharpe, Cat. B. xiii. p. 37.

♂. Samarkand. 29 April, 1908. No. 384.
♂. Bokhara. 14 March, 1908. Nos. 282, 286, 287, 288.
Imm. ♂. Samarkand. 17 Nov., 1907. No. 187.
Imm. ♂. „ 29 Oct., 1907. No. 132.

A resident in the cultivated lands; assembling in very large flocks in October, and roosting in the reed-beds that border the Zarafschan.

Although Severtzoff mentions *S. vulgaris* as wintering in the Zarafschan district, I never obtained it.

7. PASTOR ROSEUS.

Pastor roseus Sharpe, Cat. B. xiii. p. 63.

♂. Samarkand. 29 April, 1908. No. 381.

I obtained only one example of the Rose-coloured Starling, which was in a flock of Common Starlings. But when the locusts appeared in the neighbourhood of Samarkand large flocks of these birds were also to be seen preying on the locusts.

Severtzoff mentions that he observed large flocks of *Pastor roseus* suddenly appearing in the neighbourhood of Kara-Kul, on the Pamirs, following flights of locusts.

8. ORIOLUS GALBULA.

Oriolus galbula Sharpe, Cat. B. iii. p. 191.

♂. Samarkand. 12 Sept., 1907. No. 37.
Imm. ♂. Samarkand. 13 Sept., 1907. No. 39.

♀. Bokhara. 20 May, 1908. No. 492.
Imm. ♀. Samarkand. 8 Sept., 1907. No. 8.

This is a summer migrant, arriving at the end of April, and breeding in May in the cultivated areas up to an altitude of 3000 ft.

This is the common Oriole of Turkestan, *Oriolus kundoo* being much more rare.

9. ORIOLUS KUNDOO.

Oriolus kundoo Sharpe, Cat. B. iii. p. 194.

♂. Samarkand. 6 May, 1908. No. 421.

Out of a large number of Orioles collected, only one proved to belong to this species, all the others being *Oriolus galbula*.

10. EMBERIZA MILIARIA.

Miliaria miliaria Sharpe, Cat. B. xii. p. 552.

♂. Samarkand. 3 Jan., 1908. No. 261.

A rare bird in this country. I obtained only one example during the year.

11. EMBERIZA LUTEOLA.

Emberiza luteola Sharpe, Cat. B. xii. p. 506.

♂. Samarkand. 3 May, 1908. Nos. 409, 410, 411, 412.
♀. ,, ,, ,, No. 413.

This Bunting arrives in great numbers during the first week of May. In the summer it is one of the most conspicuous birds of the cultivated area, between 2000 ft. and 3000 ft.

12. EMBERIZA HORTULANA.

Emberiza hortulana Sharpe, Cat. B. xii. p. 530.

♂. Samarkand. 19 April, 1908. Nos. 349, 350.
♀. Bokhara. 20 May, 1908. No. 472.

A summer migrant, arriving in April, and found as high as 6000 ft.

13. EMBERIZA BUCHANANI.

Emberiza buchanani Sharpe, Cat. B. xii. p. 533.

♂. Samarkand. 1 May, 10 May, 1908. Nos. 391, 446, 447.

♂. Samarkand. 1 June, 1908. No. 502.

(Sex doubtful). Samarkand. 1 May, 1908. No. 392.

This is a summer migrant to the rock-country between 3000 ft. and 5000 ft. It is never found above 6000 ft.

14. EMBERIZA LEUCOCEPHALA.

Emberiza leucocephala Sharpe, Cat. B. xii. p. 549.

♀. Samarkand. 25 Oct., 17 Nov., 1907. Nos. 123, 124, 190.

15. EMBERIZA STEWARTI.

Emberiza stewarti Sharpe, Cat. B. xii. p. 547.

♂. Samarkand. 10 May, 1908. No. 445.

♂. ,, 3 May, 1908. Nos. 406, 407.

(Sex doubtful). Samarkand. 3 May, 1908. No. 408.

♂. Samarkand. 1 June, 1908. No. 501.

Found in fair numbers, in summer, in the rocky foot-hills between 3000 ft. and 5000 ft., but never ascending above 6000 ft.

16. EMBERIZA CIA.

Emberiza cia Sharpe, Cat. B. xii. p. 537.

♂. Samarkand. 25 April, 1908. Nos. 373, 374, 375, 376, 377, 378.

♂. Hissar Mts. 20 June, 1908. No. 541.

This Bunting arrives in great numbers in mid-April, and is common at 5000 ft., but does not descend lower. I also found it at 10,000 ft. It breeds at a higher level than any other species of the genus: I obtained it nesting at 9000 ft. in June.

17. EMBERIZA SCHŒNICLUS.

Emberiza schœniclus Sharpe, Cat. B. xii. p. 480.

♂. Bokhara. 19 March, 1908. No. 299.

♂ (winter plumage). Bokhara. 7, 14 Nov. and 4 Dec., 1907. Nos. 167, 173, 210.

♂ ♀ (winter plumage). Samarkand. 19 Dec., 1907. Nos. 241, 243.

♀. Bokhara. 14 Nov., 4 and 8 Dec., 1907. Nos. 174, 209, 216.

A common winter visitor to the tamarisk-jungles and reed-beds along the Zarafschan River, from 200 ft. to 2000 ft. After the middle of March I never saw any of these birds, but during the winter they were exceedingly common.

18. Carduelis major.

Carduelis major Sharpe, Cat. B. xii. p. 189.

♂. Samarkand. 10 Feb., 1908. No. 276.

This specimen belongs to the large race of the species, having a wing-measurement of 3·5 in.

19. Carduelis caniceps.

Carduelis caniceps Sharpe, Cat. B. xii. p. 189.

♂. Hissar Mts. 20 June, 1908. Nos. 584, 585.

♀. Samarkand. 11 June, 1908. No. 265.

This species seems to be confined to the mountainous country. I only found it above 5000 ft., and as high as 9000 ft. in the Hissar Mts.

20. Serinus pusillus.

Serinus pusillus Sharpe, Cat. B. xii. p. 373.

♂. Hissar Mts. 14–20 June, 1908. Nos. 535, 549, 550, 551.

♀. „ „ 14–20 June, 1908. Nos. 527, 547, 548.

This is a very common bird at 9500 ft. in the hill-country. It searches for food in large flocks on the alpine meadows, and breeds in the juniper-groves. The nest is placed on a branch about twelve feet from the ground, and is made entirely of the bark of the juniper, lined with wool and hair. On the 14th of June the females were sitting; four eggs, apparently, make a full clutch.

These birds are very tame, and were often to be seen sitting on the guy-ropes of my tent; when I took their eggs they fearlessly attacked me.

21. Acanthis fringillirostris.

Acanthis fringillirostris Sharpe, Cat. B. xii. p. 244.

♂ ♀. Eastern Ferghana. 28 July, 1908. Nos. 532, 533.

This was one of the few birds in my collection obtained outside the Zarafschan Valley. I saw a few at 4000 ft. on the western declivities of the Ak-sai Plateau, which is the extreme south-west corner of the Tian Shan Range.

22. ACANTHIS BREVIROSTRIS.

Acanthis brevirostris Sharpe, Cat. B. xii. p. 238.

♂. Samarkand. 3 Jan., 1908. No. 263.

Small flocks of this bird were seen on one occasion on the open steppe in mid-winter.

23. MYCEROBAS CARNEIPES.

Pycnorhamphus carneipes Sharpe, Cat. B. xii. p. 47.

♂. Hissar Mts. 18 June, 1908. No. 563.
♀. ,, 18–23 June, 1908. Nos. 564, 565, 594.

This is a rare bird in the Zarafschan district, chiefly on account of the absence of forests. At 9500 ft. there were a few to be found in the juniper-groves. They were exceedingly wild and shy. On the wing they resemble a Hawfinch in flight.

24. PASSER INDICUS.

Passer indicus Sharpe, Cat. B. xii. p. 311.

♂. Samarkand. 3 May, 1908. Nos. 414, 415, 416.

The distribution of this House-Sparrow in Turkestan is interesting. Formerly it was only found along the Post-roads, the common House-Sparrow of the towns being *Passer montanus*. But, apparently, *P. indicus* is extending its range and will perhaps eventually drive out *P. montanus*. *P. indicus* is now to be seen in the towns mixed up with flocks of *P. montanus*.

In out-of-the-way mountain valleys *P. indicus* breeds in the trees, but in villages where *P. montanus* is absent, it utilises the native houses.

25. PASSER MONTANUS.

Passer montanus Sharpe, Cat. B. xii. p. 301.

♂. Samarkand. 4 Nov., 1907. No. 155.
Imm. ♂. Samarkand. 11 Sept., 1907. No. 32.
Imm. (sex doubtful). Samarkand. 11 Sept., 1907. No. 33.
♀. Samarkand. 30 Oct., 4 Nov., 1907. Nos. 149, 154.

This is the common House-Sparrow of Turkestan. It is abundant in the towns of the cultivated area.

26. PASSER HISPANIOLENSIS.

Passer hispaniolensis Sharpe, Cat. B. xii. p. 317.

♂.	Bokhara.	4, 8 Dec., 1907.	Nos. 202, 217, 219, 221.
♂.	„	14 Nov., 1907.	No. 182.
♀.	„	4, 8 Dec., 1907.	Nos. 203, 204, 222, 223, 224.

This Sparrow is resident in the reed-beds of the lower Zarafschan Valley at 200 ft.

27. PASSER AMMODENDRI.

Passer ammodendri Sharpe, Cat. B. xii. p. 337.

♂. Bokhara. 14 Nov., 1907. No. 181.

I never visited the saxaul forests on the sand-wastes of Transcaspia, so I never met with the Saxaul Sparrow in its true haunts. This single specimen I obtained on the lower Zarafschan, out of a flock of *P. hispaniolensis*.

28. PETRONIA STULTA.

Petronia petronia Sharpe, Cat. B. xii. p. 289.

♂. Samarkand. 25 April, 1908. Nos. 361, 362, 363.

Large flocks of these birds haunt the country just below the snow-line, moving higher up as the snow melts.

The testes of these specimens were much enlarged, and the birds are probably early breeders.

29. MONTIFRINGILLA ADAMSI.

Montifringilla adamsi Sharpe, Cat. B. xii. p. 261.

♂. Ak-sai Plateau. 20 Aug., 1908. No. 607.

I obtained one example of Adams' Snow-Finch at a height of 12,000 ft. on the Ak-sai Plateau, at the extreme south-west corner of the Tian Shan. The birds were very common there, and in every stage of plumage. But I have also seen them at 5000 ft. on the Hissar Mts. during a very cold spell in mid-winter.

The Ak-sai Plateau is, probably, the northern limit of *M. adamsi*. Severtzoff does not mention it at all in his Fauna of Turkestan,' Cashmere and Tibet being the true habitat of this Snow-Finch. But the bird which Severtzoff obtained in the Pamir, and which he designates as *Montifringilla alpicola*, probably belongs to this species.

30. Montifringilla sordida.

Montifringilla sordida Sharpe, Cat. B. xii. p. 266.

♂. Hissar Mts. 14, 18 June, 1908. Nos. 526, 539, 553, 554.

♀. Hissar Mts. 16 June, 1908. No. 555.

This Finch is found in large flocks along the edge of the snows at 10,000 ft. in June.

31. Fringilla montifringilla.

Fringilla montifringilla Sharpe, Cat. B. xii. p. 178.

♀. Samarkand. 14 Dec., 1908. No. 233.

Only one example of the Brambling was obtained, at 5000 ft. in the hills near Samarkand.

32. Carpodacus erythrinus.

Carpodacus erythrinus Sharpe, Cat. B. xii. p. 391.

♂. Samarkand. 30 April, 3 May, 1908. Nos. 387, 396, 401.

♀. Samarkand. 29 April, 6 May, 1908. Nos. 383, 402, 438.

♀. Samarkand. 10 Sept., 1907. No. 26.

A summer migrant, arriving in great number the first week in May, but going further north than the Zarafschan Valley to breed.

33. Carpodacus grandis.

Carpodacus grandis Sharpe, Cat. B. xii. p. 404.

♂. Hissar Mts. 16–20 June, 1908. Nos. 546, 552, 561.

♂. Samarkand. 10 Feb., 1908. No. 274.

♀. Hissar Mts. 18–20 June, 1908. Nos. 540, 545, 551, 560.

This species is resident in the juniper-forests at 9000 ft., where it breeds in the middle of June. In hard weather during the winter it occasionally descends as low as 2000 ft. in the cultivated area.

34. RHODOPECHYS SANGUINEA.

Rhodopechys sanguinea Sharpe, Cat. B. xii. p. 280.

♂. Hissar Mts. 25 April, 1908. Nos. 366, 367.
♀. „ „ „ No. 368.

Found, rarely, on the edge of the snow at 7000 ft. A very shy wild bird, with a curious flight, somewhat like that of a Woodpecker.

35. ERYTHROSPIZA MONGOLICA.

Erythrospiza mongolica Sharpe, Cat. B. xii. p. 287.

♂. Samarkand. 12, 14 April, 1908. Nos. 331, 337.
♀. „ 27 Oct., 1907. Nos. 129, 130.

This is a somewhat rare bird, chiefly haunting the loëss ravines, but also found at 5000 ft. in the rock-country.

36. OTOCORYS ALBIGULA.

Eremophila alpestris albigula Hartert, Vög. Pal. Fauna, i. p. 262.

♂. Hissar Mts. 25 April, 1908. Nos. 372, 369.
♂. „ 24 June, 1908. No. 599.
♀. „ 25 April, 1908. Nos. 370, 371.

This species is only found above 7000 ft. in the mountains, frequenting the alpine pastures just below the snow.

37. MELANOCORYPHA BIMACULATA.

Melanocorypha bimaculata Sharpe, Cat. B. xiii. p. 555.

♂. Samarkand. 10–28 May, 1908. Nos. 442, 443, 499.

This summer migrant to the Zarafschan Valley arrives during the first week in May in the neighbourhood of Samarkand, and breeds in the corn-fields. It is a very local bird, and appears to be confined to the cultivated area at about 2000 ft.

38. ALAUDA CANTARELLA.

Alauda arvensis cantarella Hartert, Vög. Pal. Fauna, i. 1905, p. 246.

♂. Samarkand. 27 Oct., 1907. Nos. 127, 128.
♀. „ 23 Sept., 1907. No. 48.
Sex doubtful. Bokhara. 14 Nov., 1907. No. 177.

All the Common Skylarks were winter visitors in Zarafschan. In the summer their place was taken by great numbers of Indian Skylarks, which come north to the Zarafschan Valley to breed. All my specimens belong to the "mealy form."

39. Alauda inconspicua.

Alauda gulgula inconspicua Hartert, Vög. Pal. Fauna, i. p. 249.

♂. Bokhara. 18–20 May, 1908. Nos. 479, 458, 487.

This Lark is a summer visitor to the low steppe, breeding in the cultivated lands at 200 ft. I never found it higher up than 1000 ft.

40. Galerida magna.

Galerida cristata magna Hartert, Vög. Pal. Fauna, i. p. 235.

♂. Samarkand. 17 Nov., 22 Sept., 1907. Nos. 191, 46.
♀. „ 18 Nov., 23 Sept., 1907. Nos. 197, 50.

All the Crested-Larks that I collected belong to the large, pale race called *G. magna* by Hume. My specimens agree with those in the British Museum from Kashgar and Tashkent.

41. Calandrella brachydactyla.

Calandrella brachydactyla brachydactyla Hartert, Vög. Pal. Fauna, i. p. 215.

♂. Samarkand. 25 April, 1908. Nos. 364, 365.
♂. Bokhara. 20–22 March, 1908. Nos. 309, 474, 308, 310.
♀. „ 22 March, 1908. No. 311.

42. Calandrella pispoletta.

Calandrella pispoletta Sharpe, Cat. B. xiii. p. 587.

♂. Bokhara. 14 Nov., 1907. Nos. 178, 179.

This specimen belongs to the pale race of the species from the Oxus deserts.

43. CALANDRELLA LEUCOPHÆA.

Calandrella leucophæa Hartert, Vög. Pal. Fauna, i. p. 219.

♀. Bokhara. 14 Nov., 1907. No. 180.

This desert form of *C. pispoletta* is a somewhat rare bird. My specimen agrees exactly with those that Severtzoff obtained in the same district. The outer tail-feathers are pure white, except for a dot at the base of the inner web, which distinguishes it from *C. adamsi.*

44. MOTACILLA ALBA.

Motacilla alba Sharpe, Cat. B. x. p. 464.

♂. Bokhara. 24 March, 1908. No. 323.

♂ imm. Samarkand. 18 Oct., 1907. No. 88.

♀ imm. „ 14 Sept., 18 Oct., 1907. Nos. 43, 89.

45. MOTACILLA PERSONATA.

Motacilla personata Sharpe, Cat. B. x. p. 479.

♂. Samarkand. 25 April, 1908. No. 353.

♂ imm. Samarkand. 4 Nov., 1907. No. 153.

46. MOTACILLA MELANOPE.

Motacilla melanope Sharpe, Cat. B. x. p. 497.

♂. Samarkand. 3 May, 25 April, 1908. Nos. 403, 356.

♂ imm. Samarkand. 21 Oct., 1907. No. 97.

47. MOTACILLA FELDEGGI.

Motacilla feldeggi Sharpe, Cat. B. x. p. 527.

♂. Bokhara. 22 March, 1908. Nos. 315, 317.

♂. „ 18 May, 1908. No. 459.

♀ imm. Samarkand. 8 Sept., 1908. No. 6.

This is a fairly common bird in the marshlands of the lower Zarafschan. Flocks of these Wagtails are often to be seen following the droves of sheep and feeding amongst them. Thy are summer migrants to the Zarafschan Valley.

48. ANTHUS TRIVIALIS.

Anthus trivialis Sharpe, Cat. B. x. p. 543.

♂. Samarkand. 8 Sept., 11 Oct., 1907. Nos. 4, 58.

♂. „ 14 April, 1908. No. 339.

Sex doubtful. Samarkand. 8 Sept., 1907. No. 2.

49. ANTHUS SPIPOLETTA.

Anthus spipoletta Sharpe, Cat. B. x. p. 593.

♂. Samarkand. 18 Nov., 1907. No. 196.
♂. Bokhara. 4 Dec., 1907. No. 211.

50. ANTHUS CAMPESTRIS.

Anthus campestris Sharpe, Cat. B. x. p. 569.

♂. Samarkand. 1 May–10 May, 1908. Nos. 448, 389, 390.
♂. „ 24 Oct., 1907. No. 117.

51. CERTHIA HIMALAYENSIS.

Certhia himalayensis Gadow, Cat. B. viii. p. 327.

♂. Samarkand. 21 Nov., 1907. No. 198.
♂. Hissar Mts. 20 June, 1908. No. 568.
♀. Samarkand. 22 Dec.–2 Feb., 1907–8. Nos. 270, 251.

The Tree-Creeper is a rather rare resident in the Zarafschan Valley. It breeds at 9000 ft. in the juniper-groves and descends to the cultivated area around Samarkand in the winter.

This is a Himalayan bird which extends as far north as the Zarafschan, but no further, north of this its place being taken by *C. familiaris.* According to their locality, my specimens ought to belong to the north-western race of *C. himalayensis,* named by Severtzoff *C. tæniura,* distinguished by its greater size, paler upper parts and whiter under parts. But my specimens agree exactly in colour and in size with birds from Kohat and Astor, and do not come up to the measurements of specimens from Samarkand in the British Museum.

The culmens vary between ·7 and ·9 inch, and the wing measurements vary between 2·6 and 2·7 inches.

52. TICHODROMA MURARIA.

Tichodroma muraria Gadow, Cat. B. viii. p. 331.

♂. Samarkand. 23 Oct., Nov., 1 Jan., 1907–8. Nos. 107, 134, 201, 259.

The Wall-Creeper is very common in the plains of Samarkand and in the rocky foot-hills in winter: it is much less often seen in summer.

53. SITTA TEPHRONOTA.

Sitta tephronota Sharpe, Ann. Mag. Nat. Hist. ser. 4, x. p. 450.

♂. Hills near Samarkand. 11–15 Oct., 1907. Nos. 76, 77.
♂. ,, ,, ,, 25 April, 1 June, 1908. Nos. 357, 503, 504.
♀. ,, ,, ,, 19 April, 1908. No. 345.
♀. Hissar Mts. 20 June, 1908. No. 587.

Sex doubtful. Hills near Samarkand. 15 Oct., 1907. No. 76.

This Nuthatch is a very common resident in the rocky foot-hills between 3000 and 7000 ft., but rarely goes above this altitude. On one occasion I found it at 8000 ft. It breeds at the end of April.

54. REGULUS HIMALAYENSIS.

Regulus himalayensis Gadow, Cat. B. viii. p. 81.

♂. Samarkand. 4 Nov.–19 Dec., 1907. Nos. 185, 156, 157, 236.
♀. Samarkand. 16 Nov.–19 Dec., 1907. Nos. 186, 237.

This Gold-Crest is a winter visitor to the Vale of Samarkand; its summer haunts are probably the forests of the Tian Shan Mts.

55. LEPTOPŒCILE SOPHIÆ.

Leptopœcile sophiæ Gadow, Cat. B. viii. p. 86.

♂. Hissar Mts. 14–24 June, 1908. Nos. 530, 572, 573, 574, 583.
♀. Hissar Mts. 18 June, 1908. No. 538.

This bird is peculiar to the juniper-groves at 8000 and 9000 ft. in the mountains, and is generally found in small flocks.

It must breed very early, for on the 18th of June the young were fully fledged and flying about. I could not obtain any very good specimens owing to the fact that all the birds were either young or in full moult.

This is a Cashmere species, ranging into Turkestan as far as the Tian Shan Mts.

56. PARUS BOKHARENSIS.

Parus bokharensis Gadow, Cat. B. viii. p. 16.

♂. Samarkand. 9–13 Sept., 1907. Nos. 15, 21, 22, 40.
♀. ,, 10–14 Sept., 1907. Nos. 23, 42.

This Tit is a very common resident in the cultivated areas, not going above 4000 ft. It has a great variety of notes. On the 30th of May, I found a nest of young birds in a hole in a poplar tree only one foot above the ground. This large race of *Parus cinereus* has a total length of from 5·7 to 6 inches, and a wing-measurement varying between 2·6 and 2·75 inches.

57. PARUS FLAVIPECTUS.

Parus flavipectus Gadow, Cat. B. viii. p. 11.

♂. Samarkand. 28 Dec., 1907. No. 256.
♂. ,, 25 Jan., 1908. No. 268.
♀. ,, 28 Dec., 1907. Nos. 257, 258.
Sex doubtful. Samarkand. 25 Jan., 1907. No. 269.

A somewhat rare resident in the cultivated regions, generally seen in small flocks of five or six individuals.

58. PARUS RUFONUCHALIS.

Parus rufonuchalis Gadow, Cat. B. viii. p. 29.

♂. Hissar Mts. 14–23 June, 1908. Nos. 528, 537, 582.
♀. Hissar Mts. 14–18 June, 1908. Nos. 529, 536.

This Tit is peculiar to the juniper-forests from 8000 to 9000 ft. in the Hissar Mts., never descending lower. It is a very silent bird for a Tit, and its note, when uttered, is very soft and weak. The specimens were in full moult and the young were fledged.

59. LANIUS LEUCOPTERUS.

Lanius leucopterus Grant, Nov. Zool. ix. p. 455.

♂. Samarkand. 26 Dec., 1907. No. 255.

60. LANIUS HOMEYERI.

Lanius homeyeri Grant, Nov. Zool. ix. p. 454.

♀. Bokhara. 24 March, 1908. No. 320.
♀ imm. Bokhara. 4 Dec., 1907. No. 205.
♀ imm. Samarkand. 3 Jan., 1908. No. 260.

61. LANIUS DEALBATUS.

Lanius dealbatus Grant, Nov. Zool. ix. p. 458.

♀ imm. Bokhara. 24 March, 1908. No. 321.

62. LANIUS MINOR.

Lanius minor Grant, Nov. Zool. ix. p. 470, Dec. 1902.

♂. Samarkand. 1 June, 1908. Nos. 510, 511, 512.
♀. „ 10 May, 1908. No. 439.

This is a summer migrant, arriving during the first week in May in large numbers. It breeds in the cultivated area in June.

63. LANIUS COLLURIO.

Lanius collurio Grant, Nov. Zool. ix. p. 471, Dec. 1902.

♂. Bokhara. 15–20 May, 1908. Nos. 491, 456.
♂ imm. Samarkand. 8–11 Sept., 1907. Nos. 7, 11.
♀. Bokhara. 15 May, 1908. No. 457.

A summer migrant, commoner on the steppe at 600 ft. than in the cultivated area (2000 ft.).

64. LANIUS PHŒNICUROIDES.

Lanius phœnicuroides Grant, Nov. Zool. ix. p. 12.

♂. Samarkand. 6 May, 1908. No. 422.
♂ jr. „ 15 Oct., 1907. No. 69.

65. LANIUS ERYTHRONOTUS.

Lanius erythronotus Grant, Nov. Zool. ix. p. 477.

♂ ♀. Samarkand. 1 June, 1908. Nos. 514, 515.

A summer migrant to the cultivated area only; not to be met with on the open country.

In the first week in June these birds were laying. Their nests were built in the poplars, about thirty feet from the ground, and were made of fresh green grass and moss. In the nests I found all sorts of odds and ends such as bits of string and cloth and sheeps' wool.

66. SYLVIA CINEREA.

Sylvia cinerea Seebohm, Cat. B. v. p. 8.
♂. Samarkand. 8 Sept., 1907. No. 5.
♂. Bokhara. 20 May, 1908. No. 473.
♀. ,, ,, ,, No. 476.

67. SYLVIA AFFINIS.

Sylvia affinis Seebohm, Cat. B. v. p. 19.
♂. Samarkand. Sept. 1907. Nos. 3, 31.
♂. ,, May, 1908. Nos. 397, 431.
♀. ,, Sept. 1907. No. 12.
♀. ,, May, 1908. No. 432.

68. SYLVIA MINUSCULA.

Sylvia minuscula Seebohm, Cat. B. v. p. 20.
♂. Bokhara. 23 May, 1908. No. 319.
♀. Samarkand. 3 May, 1908. No. 404.

69. SYLVIA NANA.

Sylvia nana Seebohm, Cat. B. v. p. 26.
♂. Bokhara. 14–23 March, 1908. Nos. 283, 318.

This little Warbler is found on the low-lying deserts of Bokhara in small numbers. It is a summer migrant, arriving early in March.

70. PHYLLOSCOPUS TRISTIS.

Phylloscopus tristis Seebohm, Cat. B. v. p. 63.
♂. Samarkand. 11 Oct., 1907. No. 60.
♂. Samarkand. 5–19 April, 1908. Nos. 325, 326, 327, 328, 351.
♀. Samarkand. 29 Oct., 1907. No. 145.
♀. ,, 6 May, 1908. No. 433.

71. PHYLLOSCOPUS HUMII.

Phylloscopus humii Seebohm, Cat. B. v. p. 67.
♂. Samarkand. 29 Oct., 1907. No. 146.

♂. Hissar Mts. 14 June, 1908. No. 534.
♀. ,, 18, 20 June, 1908. Nos. 562, 566.

I found this bird breeding at 9500 ft. in the juniper-groves of the Hissar Mts. The nest was domed and was made of grass, without any lining except a few hairs. It was placed on the ground under a small bush. On the 19th of June the full clutch of five eggs was hard-set.

72. PHYLLOSCOPUS VIRIDANUS.

Phylloscopus viridanus Seebohm, Cat. B. v. p. 44.

♂. Samarkand. 4 May, 1908. No. 420.
♂. Bokhara. 20 May, 1908. Nos. 477, 478, 498.

73. PHYLLOSCOPUS OCCIPITALIS.

Phylloscopus occipitalis Seebohm, Cat. B. v. p. 50.

♂. Hissar Mts. 23 June, 1908. No. 593.

74. HYPOLAIS RAMA.

Hypolais rama Seebohm, Cat. B. v. p. 84.

♂. Samarkand. 6 May–5 June, 1908. Nos. 427, 506, 517, 520, 521, 522.
♂. Bokhara. 18–20 May, 1908. Nos. 463, 464, 465, 466, 481, 485.
♀. Samarkand. 6 June, 1908. No. 523.
♀. Bokhara. 20 May, 1908. Nos. 482, 486.

This is one of the commonest Warblers in the low tamarisk jungles, and in the cultivated valleys up to 2000 ft.

75. HYPOLAIS CALIGATA.

Hypolais caligata Seebohm, Cat. B. v. p. 85.

♀. Bokhara. 18–28 May, 1908. Nos. 462, 500.
♂. „ 20 May, 1908. No. 475.

This is a summer migrant to the low deserts, found in very barren localities.

76. AEDON FAMILIARIS.

Sylvia familiaris Seebohm, Cat. B. v. p. 36.

♂. S.W. of Bokhara. 18–20 May, 1908. Nos. 461, 469, 470, 471, 483, 484.
♀. S.W. of Bokhara. 18 May, 1908. No. 460.

This bird arrives in great numbers on the Bokharan deserts in the middle of May. It does not seem to extend above 1000 ft., but is very numerous on the tamarisk-covered sand-hills at 200 ft.

77. Acrocephalus agricola.

Acrocephalus agricola Seebohm, Cat. B. v. p. 106.

♀. Samarkand. 6 May, 1908. No. 426.

A summer migrant to the cultivated areas.

78. Acrocephalus dumetorum.

Acrocephalus dumetorum Seebohm, Cat. B. v. p. 104.

♂. Samarkand. 6 May–4 June, 1908. Nos. 424, 425, 449, 516.

♀. Samarkand. 6 June, 1908. No. 524.

This is a summer migrant to the cultivated valleys at 2000 ft.

79. Monticola saxatilis.

Monticola saxatilis Seebohm, Cat. B. v. p. 313.

♂. Samarkand. 19 April, 1908. No. 344.

♀. Bokhara. 20 May, 1908. No. 494.

This summer migrant arrives in the first week of May.

80. Monticola cyanus.

Monticola cyanus Seebohm, Cat. B. v. p. 316.

♂. Samarkand. 10 May, 1908. No. 440.

♀. „ 10 May, 1908. No. 441.

A summer migrant, arriving during the first week in May.

81. Turdus viscivorus.

Turdus viscivorus Seebohm, Cat. B. v. p. 194.

♀. Samarkand. 6 March, 1908. No. 278.

♀. Hissar Mts. 24 June, 1908. No. 600.

The Missel Thrush is very rare in the Zarafschan Valley. It breeds at 9000 ft. in the Hissar Mts., building its nest in the juniper trees. On the 24th of June the birds were feeding their young.

82. Turdus pilaris.

Turdus pilaris Seebohm, Cat. B. v. p. 205.

♂. 100 miles north of Samarkand. 3 Jan., 1908. No. 262.

A rare winter visitor to Zarafschan.

83. Turdus atrigularis.

Turdus atrigularis Seebohm, Cat. B. v. p. 267.

♂. Samarkand. 6 Feb., 1908. No. 272.
♂. ,, 7 Oct., 1907. No. 54.
♂. ,, 25 Oct., 1907. No. 121.
♂. ,, 11 Oct., 1907. No. 64.
♀. ,, 2 Feb., 1908. No. 271.

This Thrush arrives in the Zarafschan Valley in immense numbers during the month of October. It is fairly common all the winter in the cultivated areas, but by the end of February the birds have left on their northern migration. Although many winter in the neighbourhood of Samarkand, the majority pass further southwards. The strongest migration across the valley takes place during the middle of October, southwards; and during the middle of March, northwards.

84. Turdus merula.

Merula merula Seebohm, Cat. B. v. p. 235.

♂. Samarkand. 16 Nov., 1907. No. 184.
♂. ,, 22, 26 Dec., 1907. Nos. 252, 254.

The Blackbird is rare in the cultivated districts and I only saw it in winter. Severtzoff mentions it as breeding in the northern part of Turkestan, and these are probably the birds that winter in the Zarafschan Valley. The wing-measurements are remarkably long, namely, 5·38, 5·25, and 5·20 inches.

85. Accentor atrigularis.

Accentor atrigularis Sharpe, Cat. B. vii. p. 656.

♀. Samarkand. 18 Jan., 6 Feb., 1908. Nos. 266, 273.
Sex doubtful. Samarkand. 18 Jan., 1908. No. 267.

I only once came across this Accentor, during a very hard spell of snowy weather in January. The birds were feeding on the ground in a poplar grove, when I shot them.

86. RUTICILLA RUFIVENTRIS.

Ruticilla rufiventris Seebohm, Cat. B. v. p. 342.

♂. Samarkand. 25 April, 1908. No. 358.
♂. Hissar Mts. 20 June, 1908. Nos. 543, 542.
♂ imm. Samarkand. 23 Oct., 1907. Nos. 111, 109, 110.
♀. Samarkand. 15–23 Oct., 1907. Nos. 113, 95, 75, 112.

Common on the rocky foot-hills of Zarafschan, and breeding at 9000 ft. in the Hissar Range.

87. RUTICILLA ERYTHRONOTA.

Ruticilla erythronota Seebohm, Cat. B. v. p. 348.

♂. Samarkand. 19 Oct., 1907. No. 91.
♀. „ 21–22 Oct., 1907. Nos. 105, 96.
♀. „ 6 March, 1908. No. 277.

88. RUTICILLA CÆRULEOCEPHALA.

Ruticilla cæruleocephala Seebohm, Cat. B. v. p. 353.

♂. Hissar Mts. 14–24 June, 1908. Nos. 570, 571, 525, 569, 544.
♀. Hissar Mts. 16–20 June, 1908. Nos. 558, 567.

This is a common bird in the juniper-forests from 9000 to 9500 ft. in the Hissar Mts. It breeds in June, making a nest of grass on the ground, under the stump of a tree, composed of grass and moss, lined with a few feathers. The birds were sitting on eggs on the 18th of June. They appear to keep entirely to the forests, where they haunt the thickets, and are not to be met with on the open rocky slopes.

89. DAULIAS HAFIZI.

Erithacus golzii Seebohm, Cat. B. v. p. 297.

♂. Samarkand. Sept. 1907. Nos. 13, 36.
♂. „ 6 May, 1908. No. 429.
♀. „ 9 Sept., 1907. No. 19.
Sex doubtful. Samarkand. 6 May, 1908. No. 428.

This bird arrives at the end of April in the Samarkand district, but apparently breeds only at a slightly higher altitude. In June there were no Nightingales singing in the neighbourhood of Samarkand, but in the higher part of the Zarafschan Valley at 4000 ft. there were many.

90. CYANECULA SUECICA.

Erithacus cæruleculus Seebohm, Cat. B. v. p. 309.
♂. Samarkand. 11 Oct., 1907. No. 59.
♂ imm. Samarkand. 7 Oct., 1907. No. 53.
♀ imm. „ 15 Oct., 1907. No. 73.
♀. Samarkand. 18 April, 1908. No. 343.

This bird passes through the Zarafschan Valley on its spring and autumnal migrations.

91. PRATINCOLA MAURA.

Pratincola maura Sharpe, Cat. B. iv. p. 188.
♂. Samarkand. 25 April, 1908. Nos. 359, 360.
♂. „ 6 May, 1908. No. 430.
♂ imm. Samarkand. 14 Sept., 1907. No. 44.
♂ imm. „ 18 Nov., 18 Oct., 1907. Nos. 195, 86.
♀. Samarkand. 18 Oct., 1907. No. 87.
♀. „ 3 May, 1908. No. 405.

A summer migrant, and fairly common up to 4000 ft.

92. SAXICOLA ŒNANTHE.

Saxicola œnanthe Seebohm, Cat. B. v. p. 391.
♂. Hissar Mts. 24 June, 1908. Nos. 605, 606.

The only occasion on which I found the Common Wheatear was at a height of 9000 ft. in the Hissar Mts., where it was evidently breeding.

93. SAXICOLA ISABELLINA.

Saxicola isabellina Seebohm, Cat. B. v. p. 399.
♂. Samarkand. 18 Oct., 1907. No. 85.
♂. Bokhara. 22 March, 1908. No. 314.
♂. Hissar Mts. 24 June, 1908. No. 598.
♂. „ 24 June, 1908. No. 597.
♀. Bokhara. 22 March, 1908. No. 313.
♀. „ 14 March, 1908. No. 284.
♀. Samarkand. 18 Oct., 1907. No. 84.
♀. Hissar Mts. 20 June, 1908. No. 556.
♀. Samarkand. 15 Oct., 1907. No. 72.

The common Wheatear of the Zarafschan Valley is

S. isabellina. *S. œnanthe* was only obtained high up in the mountains. *S. isabellina* is common from the Bokharan deserts, at an altitude of 500 ft., up to the Samarkand steppe at 2500 ft. I also found it breeding in small numbers at 9500 ft. in the Hissar Mts.

Severtzoff mentions that he found *S. isabellina* common in the high Pamirs, where it bred.

It is a summer visitor to the Zarafschan Valley, arriving in mid-March.

94. SAXICOLA MORIO.

Saxicola morio Seebohm, Cat. B. v. p. 372.

♂. Samarkand. 19 April, 1908. No. 348.
♂. ,, 12 April, 1908. Nos. 333, 334, 335.
♂. Bokhara. 14 March, 1908. Nos. 289, 290.
♂. ,, 24 March, 1908. No. 322.
♂. Samarkand. 25 April, 1908. No. 379.
♂. ,, 19 Oct., 1907. No. 93.
♂. ,, 25 Oct., 1907. No. 120.
♂. ,, 23 Oct., 1907. No. 114.
♀. ,, 19 Oct., 1907. No. 94.
♀. ,, 15 Oct., 1907. No. 70.
♀. Bokhara. 20 May, 1908. No. 480.
♀. Samarkand. 10 May, 1908. No. 444.

The commonest Chat in the Zarafschan Valley is *S. morio.* Arriving in mid-March on the lower deserts and in April on the higher country, it breeds in localities varying from 500 to 4000 ft. in altitude. I have rarely seen it as high as 8000 ft.

On the 10th May I took a nest of this Chat, at 4000 ft. on the hills near Samarkand. The nest was placed under a rock, and was made entirely of grass, lined with hair. These Chats pass southwards during October in great numbers.

95. SAXICOLA OPISTHOLEUCA.

Saxicola opistholeuca Seebohm, Cat. B. v. p. 376.

♂. Samarkand. 1 May, 1908. No. 388.

A very rare bird in these regions. I only saw two specimens during the whole year.

96. Saxicola finschi.

Saxicola finschii Seebohm, Cat. B. v. p. 388.

♀. Samarkand. 12 April, 1908. No. 332.
♀. ,, 1 May, 1908. No. 393.

A summer visitor. It breeds in the hills near Samarkand at 3000 ft.

97. Saxicola deserti.

Saxicola deserti Seebohm, Cat. B. v. p. 383.

♂. Bokhara. 22 March, 1908. No. 312.
♂. ,, 21 March, 1908. No. 302.
♂. ,, 21 March, 1908. No. 301.
♂. ,, 21 March, 1908. No. 300.
♂. Samarkand. 19 Oct., 1907. No. 92.
♀. Bokhara. 21 March, 1908. No. 303.
♀. Samarkand. 11 Oct., 1907. No. 68.

A summer migrant to the Zarafschan Valley, arriving suddenly on the lower deserts in great numbers in the middle of March.

98. Cinclus leucogaster.

Cinclus leucogaster Sharpe, Cat. B. vi. p. 314.

♀. Samarkand. 29 Oct., 1907. Nos. 136, 135.
♀. ,, 14 Dec., 1907. Nos. 230, 229, 232, 228.

Sex doubtful. Samarkand. 29 Oct., 1907. No. 137.

This is the common Dipper of the Zarafschan Valley between 2000 and 5000 ft. Below 2000 ft. there are no Dippers at all, and above 5000 ft. the Brown Dipper takes its place. They are chiefly to be found on the highest portions of the little mountain torrents, and not on the larger rivers. They are most common at 4000 ft.

99. Cinclus asiaticus.

Cinclus asiaticus Sharpe, Cat. B. vi. p. 314.

♀ imm. Hissar Mts. 20 June, 1908. No. 586.

The common Dipper of the higher mountains is *C. asiaticus* ranging from about 4500 to 9000 ft. In June there were any number of young birds about, so much so that it was difficult to find any old ones.

100. TROGLODYTES PALLIDUS.

Anorthura pallida Sharpe, Cat. B. vi. p. 273.

♂. Hills near Samarkand. 25 Oct.–19 Dec., 1907. Nos. 106, 118, 144, 239.

♀. Hills near Samarkand. 22 Oct. – 19 Dec., 1907. Nos. 102, 103, 119, 238, 240.

This Wren is most common in the rocky mountain-gorges in very barren country ; but it is occasionally found in the reed-beds of the Zarafschan River.

101. MYIOPHONEUS TEMMINCKI.

Myiophoneus temmincki Sharpe, Cat. B. vii. p. 7.

♂. Hissar Mts. 20, 23 June, 1908. Nos. 590, 589.
♀. „ 23 June, 1908. Nos. 591, 595.
♀. Samarkand. 15 Oct., 1907. No. 79.

The Himalayan Whistling Thrush is found somewhat rarely in the steep gorges of the Hissar Range. I have seen it as low as 3000 ft., but it usually haunts the torrents and ravines at about 7000 ft. It nests in the cracks of the rocks, and by June 20th the young are fully fledged. The male bird has a most curious little warble, not unlike that of a Blackcap.

Severtzoff records this bird as far north as the Tian Shan Mts.

102. MUSCICAPA GRISOLA.

Muscicapa grisola Sharpe, Cat. B. iv. p. 151.

♂. Samarkand. 8 Sept., 1907. No. 11.

Sex doubtful. Samarkand. 8 Sept., 1907. No. 1.

A summer migrant, arriving during the middle of May.

103. MUSCICAPA PARVA.

Muscicapa parva Sharpe, Cat. B. iv. p. 161.

♂. Samarkand. 10 April, 1908. Nos. 329, 330.

A rare bird and not often met with in this district.

104. COTILE RUPESTRIS.

Cotile rupestris Sharpe, Cat. B. x. p. 109.

♂. Samarkand. 19 April, 1908. Nos. 346, 347.

Small flocks of this Swallow are found very locally in the mountains at about 6000 ft.

105. DENDROCOPUS LEUCOPTERUS.

Dendrocopus leucopterus Hargitt, Cat. B. xviii. p. 215.

♂. Samarkand. Oct., Dec., 1907. Nos. 138, 148, 253.
♀. „ Oct., Nov., 1907. Nos. 147, 150, 151, 152.

This Woodpecker is a common resident in the cultivated area from 600 to 3000 ft., and is especially numerous at 2000 ft. The numbers that inhabit the Vale of Samarkand are greatly increased during the winter months. Probably the winter visitors are those that naturally range over northern and north-eastern Turkestan, but, finding the winters too severe there, come south to the sheltered Zarafschan Valley.

106. IYNX TORQUILLA.

Iynx torquilla Hargitt, Cat. B. xviii. p. 560.

♀. Hissar Mts. 25 April, 1908. No. 380.

107. CUCULUS CANORUS.

Cuculus canorus Shelley, Cat. B. xix. p. 245.

♂. Samarkand. 6 May, 1908. No. 436.
♀. „ 6 May, 1908. No. 437.

The Common Cuckoo arrives in the first week in May, and is very common during the summer all over the cultivated region.

108. CAPRIMULGUS EUROPÆUS.

Caprimulgus europæus Hartert, Cat. B. xvi. p. 526.

♂. Bokhara. 20 May, 1908. No. 489.
♂ imm. Bokhara. 14 Nov., 1907. No. 171.

109. UPUPA EPOPS.

Upupa epops Salvin, Cat. B. xvi. p. 4.

♀. Samarkand. 8 Sept., 1907. No. 14.

This Hoopoe is very common in spring and summer, and breeds in the holes of the walnut trees. In winter the vast majority go south, but I observed a few in Samarkand on the 29th of January, when snow was on the ground.

110. MEROPS APIASTER.

Merops apiaster Sharpe, Cat. B. xvii. p. 63.

♀ imm. Samarkand. 15 Sept., 1907. No. 45.

The Bee-eater arrives during the first week in May: the majority pass the Zarafschan Valley and go further north to breed, but some remain.

111. CORACIAS GARRULUS.

Coracias garrulus Sharpe, Cat. B. xvii. p. 15.

♀. Samarkand. 1 May, 1908. No. 395.

Rollers begin to arrive on the 1st of May, and are very common all the summer. They breed in the loëss cliffs.

112. ALCEDO ISPIDA.

Alcedo ispida Sharpe, Cat. B. xvii. p. 141.

♂. Samarkand. 29 Oct., 1907. No. 141.
♀. ,, 29 Oct., 1907. No. 133.

This Kingfisher is common on the Zarafschan River itself at about 2000 ft., and also on the small mountain streams up to 4500 ft.

113. CYPSELUS MELBA.

Micropus melba Hartert, Cat. B. xvi. p. 439.

♀. Samarkand. 3 May, 1908. No. 400.

This Swift is a summer visitor, arriving in Samarkand in great numbers on the 2nd of April. Here they haunt the ruined mosques and madresahs, where they breed. They also breed at 4000 ft. in the neighbouring hills, early in May. By the 6th of November they have all gone south again.

114. ASIO ACCIPITRINUS.

Asio accipitrinus Sharpe, Cat. B. ii. p. 234.

♂. Samarkand. 22 Dec., 1907. No. 249.
♂. Bokhara. 4 Dec., 1907. No. 208.

This Owl is a common bird in the tamarisk-covered sand-dunes of Bokhara during the winter.

115. ATHENE BACTRIANA.

Athene bactriana Sharpe, Cat. B. ii. p. 137.

♂. Samarkand. 23, 24 Oct., 1907. Nos. 108, 116.
♂. ,, 19 Dec., 1907. No. 245.
♂. ,, 14 April, 1908. No. 338.

This is a common bird on the barren foot-hills, but I only observed it from 1000 to 3000 ft. All my specimens have the legs and toes densely feathered to the base of the claws.

116. SCOPS BRUCII.

Scops brucii Sharpe, Cat. B. ii. p. 62.

♂. Samarkand. 8 Sept., 1907. No. 10.

A rare resident in the cultivated region, wherever there are groves of trees.

Severtzoff does not mention this very well-defined subspecies of *Scops giu*.

117. CIRCUS CYANEUS.

Circus cyaneus Sharpe, Cat. B. i. p. 52.

♂. Bokhara. 14 Nov., 1907. No. 172.
♀ ,, 19 March, 1908. No. 304.

118. BUTEO FEROX.

Buteo ferox Sharpe, Cat. B. i. p. 176.

♂. Samarkand. 15 Oct., 1907. No. 80.

The autumnal migration of Birds-of-Prey is very noticeable in the Zarafschan Valley. In October large numbers pass over, going southwards.

119. ASTUR BADIUS.

Astur badius Sharpe, Cat. B. i. p. 109.

♂. Samarkand. 9 Sept., 1907. No. 17.
♂ imm. Samarkand. 1 May, 1908. No. 398.
♀. Bokhara. 20 May, 1908. No. 493.

This is the commonest Sparrow-Hawk of the country, being found wherever the cultivation includes groves of trees and thickets. It breeds in May as low as 600 ft. The natives train Sparrow-Hawks, chiefly in order to fly at Quails. But I cannot decide whether it is this species or *A. nisus* that they use. Very probably it is this species, for it is an even more courageous bird than the Common Sparrow-Hawk.

120. ACCIPITER NISUS.

Accipiter nisus Sharpe, Cat. B i. p. 132.

♂. Samarkand. 12 April, 1908. No. 336.

This species is much more rare than *Astur badius* in the Zarafschan Valley.

121. PERNIS APIVORUS.

Pernis apivorus Sharpe, Cat. B. i. p. 344.

♂. Samarkand. 19 Oct., 1907. No. 90.

This is, apparently, a rare bird in Central Asia. Severtzoff only records one specimen.

122. MILVUS MIGRANS.

Milvus korschun Sharpe, Cat. B. i. p. 322.

♀. Samarkand. 14 April, 1908. No. 342.

This is a common bird around the native towns, in the cultivated districts.

123. FALCO SUBBUTEO.

Falco subbuteo Sharpe, Cat. B. i. p. 315.

♀. Samarkand. 12 Sept., 1907. No. 38.

The Hobby is a summer migrant in the Zarafschan.

124. FALCO CENCHRIS.

Cerchneis naumanni Sharpe, Cat. B. i. p. 437.

♂. Samarkand. 1 May, 1908. No. 394.

♂ imm. Samarkand. 11 Sept., 1907. No. 29.

This Kestrel is exceedingly common in spring on the migration, but few remain to breed. It first appears in mid-April.

125. ANSER RUBRIROSTRIS.

Anser rubrirostris Salvad. Cat. B. xxvii. p. 91.

♀. Bokhara. 6 Dec., 1907. No. 213.

These Geese are winter migrants to the lakes formed by the Zarafschan in the Bokhara steppes. They congregate in enormous numbers, but have all left by the 20th of March.

Bill bright pink, horny-nail white, base of lower mandible paler, base of bill orange-red.

126. NETTION CRECCA.

Nettion crecca Salvad. Cat. B. xxvii. p. 243.

♂. Bokhara. 18 March, 1908. No. 298.

♀. Samarkand. 18 Oct., 1907. No. 83.

The Teal is a winter visitor to the Zarafschan, but also passes the lower course of the river in mid-March in large flocks migrating north. Incredible numbers collect on the small lakes of the steppe at night.

127. MARECA PENELOPE.

Mareca penelope Salvad. Cat. B. xxvii. p. 227.

♂. Bokhara. 24 March, 1908. No. 324.

♀. Samarkand. 30 Oct., 1907. No. 133.

This a winter migrant to the Zarafschan River.

128. FULIGULA FERINA.

Nyroca ferina Salvad. Cat. B. xxvii. p. 335.

♂. Bokhara. 18 March, 1908. No. 296.

♀. „ 18 March, 1908. No. 297.

The Pochard passes the lower Zarafschan in immense numbers on its northward migration in the middle of March.

129. MERGUS ALBELLUS.

Mergus albellus Salvad. Cat. B. xxvii. p. 464.

♀. Bokhara. 4–8 Dec., 1907. Nos. 206, 225.

The Smew is very common on the lower Zarafschan in winter.

130. ÆGIALITIS CURONICA.

Ægialitis dubia Sharpe, Cat. B. xxiv. p. 263.

♂. Bokhara. 20 May, 1908. No. 495.

131. TOTANUS OCHROPUS.

Helodromus ochropus Sharpe, Cat. B. xxiv. p. 437.

♀. Samarkand. 18 Nov., 1907. No. 194.

132. LARUS RIDIBUNDUS.

Larus ridibundus Saunders, Cat. B. xxv. p. 207.

♂. Bokhara. 14, 22 March, 1908. Nos. 281, 316.

133. STERNA ANGLICA.

Gelochelidon anglica Saunders, Cat. B. xxv. p. 25.

♂. Bokhara. 15 May, 1908. No. 451.
♀. „ 18 May, 1908. No. 468.

This Tern breeds on the lower Zarafschan.

134. STERNA MINUTA.

Sterna minuta Saunders, Cat. B. xxv. p. 116.

♂. Bokhara. 20 May, 1908. No. 497.

135. RALLUS AQUATICUS.

Rallus aquaticus Sharpe, Cat. B. xxiii. p. 20.

♂. Samarkand. 19 Dec., 1907. No. 244.

136. PORZANA PUSILLA.

Porzana pusilla Sharpe, Cat. B. xxiii. p. 106.

♂ imm. Samarkand. 29 Oct., 1907. No. 139.

This is a young bird, lacking all the slate-colour on the under parts.

137. COLUMBA INTERMEDIA.

Columba intermedia Strickl.; Salvad. Cat. B. xxi. p. 259.

♂. Samarkand. 17 Nov., 1907. No. 193.
♀. Hissar Mts. 23 June, 1908. No. 581.

This Pigeon is common in the foot-hills and loëss cliffs. It is numerous at about 2000 ft., but occasionally goes up to 9000 ft. Above this its place is taken by *C. rupestris*.

138. COLUMBA RUPESTRIS.

Columba rupestris Salvad. Cat. B. xxi. p. 250.

♂. Hissar Mts. 20 June, 1908. Nos. 575, 576.
♀. „ 20 June, 1908. Nos. 577, 578.

This Pigeon is peculiar to the mountain ranges, from 8000 to 10,000 ft.

139. TURTUR COMMUNIS.

Turtur communis Salvad. Cat. B. xxi. p. 397.

♂. Samarkand. 4 June, 1908. No. 519.
♂. Bokhara. May, 1908. Nos. 453, 454, 488.

This Dove is a summer migrant to the Zarafschan Valley, ranging from 600 ft. up to 4000 ft. The first arrivals take place during the first week in May.

140. TURTUR FERRAGO.

Turtur ferrago Salvad. Cat. B. xxi. p. 401.

♂. Hissar Mts. 24 June, 1908. Nos. 579, 596, 604.

This Dove takes the place of *T. communis* in the high mountains. It is confined to an area of from 8000 to 10,000 ft.

141. TURTUR CAMBAYENSIS.

Turtur cambayensis Salvad. Cat. B. xxi. p. 452.

♂. Samarkand. Sept., Oct., Nov., 1907. Nos. 34, 65, 188.
♀. ,, Sept., Nov., 1907. Nos. 35, 189.

A common resident in the cultivated regions from 600 ft. to 3000 ft. It is very tame and confiding, and is always to be seen in the courtyards of the native houses.

Severtzoff only mentions *Turtur senegalensis*, but all my specimens belong to the nearly allied *T. cambayensis*, having the rump like the back—earthy-brown. Numbers 34 and 65, however, have the rump partly earthy-brown and partly bluish.

142. PTEROCLES ARENARIUS.

Pterocles arenarius Ogilvie-Grant, Cat. B. xxii. p. 19.

♂. Samarkand. 21 Nov., 1907. No. 199.
♀. ,, ,, No. 200.

This Sandgrouse is common on the steppes from 600 ft. up to 2500 ft.

143. PTEROCLES ALCHATA.

Pteroclurus alchata Ogilvie-Grant, Cat. B. xxii. p. 7.

♂. Samarkand. 30 April, 1908. No. 385.
♀. Bokhara. 22 March, 1908. No. 305.

In spring I saw incredible numbers of the Pin-tailed Sandgrouse passing Bokhara as if on migration. For many days immense flocks of these birds crossed overhead continually, going in a south-easterly direction.

It appears that the Karshi steppes, S.E. of Bokhara, are the first to become green in the spring, and thither the native shepherds drive their valuable flocks of Kara-Kul or 'Astrakhan' sheep. It seems that the Sandgrouse also know of the good food that is to be obtained there at an early date, and migrate thither from the more northerly and foodless steppes.

114. Syrrhaptes paradoxus.

Syrrhaptes paradoxus Ogilvie Grant, Cat. B. xxii. p. 2.

♂. Bokhara. 4 Dec., 1907. No. 212.

This species is found in immense numbers, at certain seasons, on the low steppes. It does not appear to frequent the higher steppe valleys, like *Pterocles arenarius*.

115. Phasianus zerafshanicus. (Plate VIII.)

Phasianus zerafshanicus Ogilvie-Grant, Cat. B. xxii. p. 326.

♂. Bokhara. 18 May, 1908. No. 496.
♂. ,, 4 June, 1908. No. 518.
♂. Samarkand. 11 Oct., 1907. No. 67.
♂. Bokhara. 16 Nov., 1907. Nos. 161, 163, 164.
♀. ,, 16 Nov., 1907. No. 162.

The excellent coloured figure from which the accompanying plate (Pl. VIII.) is taken was drawn by Major Jones, to whom my best thanks are due.

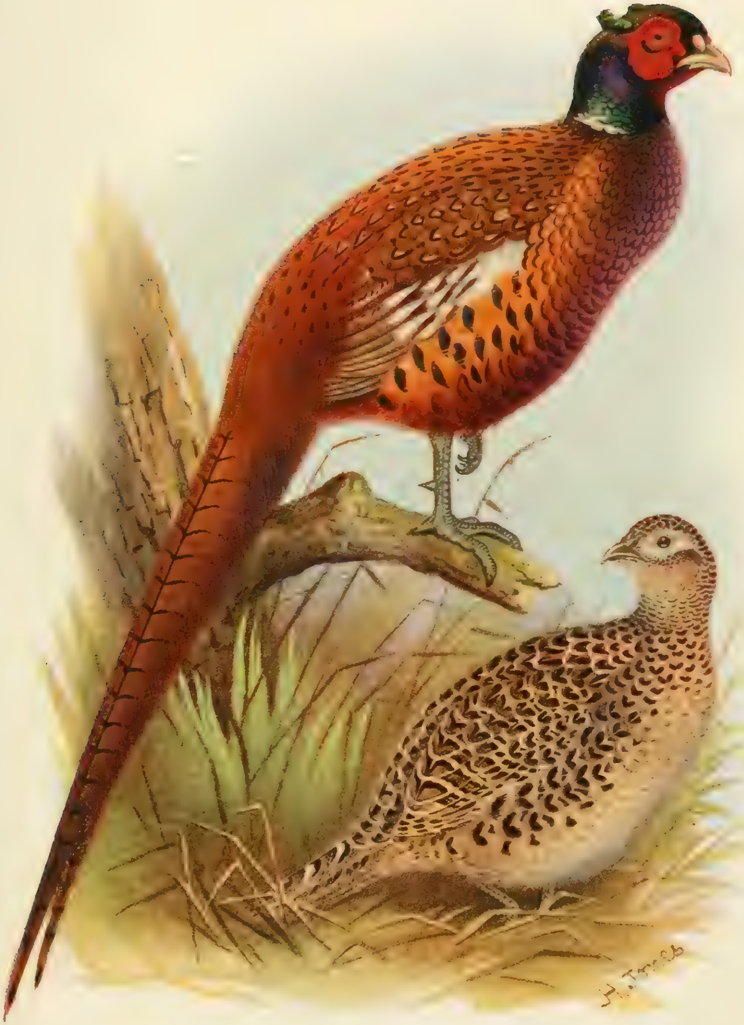
This Pheasant, peculiar to the self-contained basin of the Zarafschan River, is found wherever there is jungle, both in the cultivated area and in the tamarisk swamps. It is most numerous on the lowest portion of the river, especially where it forms small lakes and swamps in the Bokharan deserts. It ranges as far east as Samarkand at 2000 ft.

The Zarafschan is a self-contained basin, and the Pheasants are confined to this river-valley, not being able to wander and mix with those of the Oxus, or the Syr Daria Valleys.

Although the Zarafschan approaches to within thirty or forty miles of the Oxus, yet those thirty miles form an impassable barrier of barren sand-dunes.

In May and June these birds lose most of the vinous tinge on the breast and abdomen, and the upper parts become very pale and 'washed out,' the margins to the feathers being pale buff instead of a rich golden copper colour.

IBIS, 1910. *Pl. VIII.*



André & Sleigh, Ltd

PHASIANUS ZERAFSHANICUS, ♂ & ♀.

146. TETRAOGALLUS HIMALAYENSIS.

Tetraogallus himalayensis Ogilvie-Grant, Cat. B. xxii. p. 106.

♂. Hissar Mts. 1 May, 1908. No. 399.

The Himalayan Snow-cock extends into the Hissar mountains and is to be found in fair numbers within a few days' journey of Samarkand. This is probably their most westerly range, and they do not descend below 10,000 ft. in summer.

The Snow-cock is highly prized by the natives of Turkestan as a fighting bird. Cock-fighting is one of their chief pastimes, but Quails, Chucar Partridges, and even Snow-cocks are also employed.

Its native name is ‘Ulah.’

147. CACCABIS CHUCAR.

Caccabis chucar Ogilvie-Grant, Cat. B. xxii. p. 113.

♂. Samarkand. May, 1908. Nos. 417, 418.
♀. „ May, 1908. No. 419.

Wherever there are rocky hills, from 1000 up to 10,000 ft., the Chucar Partridge is found in great numbers.

Having collected specimens of *C. chucar* in different localities, from the low, hot, Dead Sea basin at 1300 ft. *below* the level of the ocean, up to 10,000 ft. *above* in Central Asia, I have not been able to notice any constant variation, either in plumage or size, in birds from the different altitudes.

These specimens are of the light variety, being found on barren rocky hills, and probably correspond with the Afghanistan and Persian forms rather than with those of the Himalayas and Tian Shan.

APPENDIX.

Examples of the following birds were obtained in the Zarafschan Valley, and the species were determined, but the specimens were not brought home.

1. CORVUS CORAX Linn.

Samarkand. 22 Oct., 1907.

2. Ampelis garrulus Linn.

Samarkand. 5 Feb., 1908.

3. Ligurinus chloris (Linn.).

Samarkand. 4 March, 1908.

4. Melanocorypha yeltoniensis Forst.

Large flocks of this Lark were observed near the Sea of Aral in August.

5. Hirundo rustica Linn.

Arrives in Samarkand in the middle of April. A summer visitor only.

6. Cypselus apus (Linn.).

7. Gyps fulvus (Gmel.).

8. Neophron percnopterus (Linn.).

Common round Samarkand.

9. Gypaëtus barbatus (Linn.).

Hissar Mts. Not seen lower than 7000 ft.

10. Aquila chrysaëtus (Linn.).

Samarkand. 11 Jan., 1908.

11. Falco cherrug Gray.

Samarkand. 15 Dec., 1907.

12. Bubo turcomanus Eversm.

On several occasions I heard Eagle Owls at night in the hills near Samarkand, and once I saw a pair on the tamarisk-covered sand-hills between Bokhara and the Oxus. According to Severtzoff they range from the Bokharan deserts up to the Pamirs.

13. Phœnicopterus roseus Pall.

Samarkand. 4 Nov., 1907.

14. Anas boscas Linn.

Bokhara. 4 Dec., 1907. Very numerous in winter.

15. Ardea alba Linn.

Samarkand. Nov., 1907.

16. **Nycticorax griseus** Linn.

Samarkand. 7 June, 1908.

17. **Botaurus stellaris** Linn.

Samarkand. 19 Dec., 1907.

18. **Ciconia alba** Bechst.

This is a summer migrant to the Zarafschan Valley, where it breeds in May, building in the trees and on the minarets and domes of the mosques.

19. **Totanus calidris** Linn.

Samarkand. 10 Oct., 1907, and 7 June, 1908.

20. **Gallinago cœlestis** (Frenzel).

Samarkand. 25 Oct., 1907.

21. **Otis tarda** Linn.

Bokhara. 7 Nov., 1907. A winter migrant.

22. **Coturnix communis** Bonn.

A very common summer visitor, but occasionally met with also in winter. The birds are captured in great quantities by the natives, and used for fighting purposes.

XXI.—*On a Collection of Birds from the Dead Sea and North-western Arabia, with Contributions to the Ornithology of Syria and Palestine.* By Douglas Carruthers, F.R.G.S., M.B.O.U.

(Plate IX. and Text-figure 5.)

During the journeys which I made in the early part of 1909 to the Dead Sea, the uplands of Moab, and the deserts of North-western Arabia, I formed a small collection of birds, and made a certain number of notes on the ornithology of these little-known countries. Scarcely any work has been done in these districts since Tristram's day, and the range of his explorations extended no further than the Land of Moab. Indeed, I cannot find that any ornithologist has penetrated into the country lying to the south-east, towards the Hedjaz provinces of Arabia.

The region that I traversed (see Map, Plate IX.) comprised the low, hot depression that holds the Dead Sea and sinks to 1300 ft. below the level of the Mediterranean, the extremely rocky precipitous declivities of the Moab Plateau, which form the eastern wall of the depression, the rolling uplands of Moab, which afford a certain amount of pasture, and, lastly, the inner deserts (the stony Hammad and the sandy Nafud) which stretch into the very heart of Arabia.

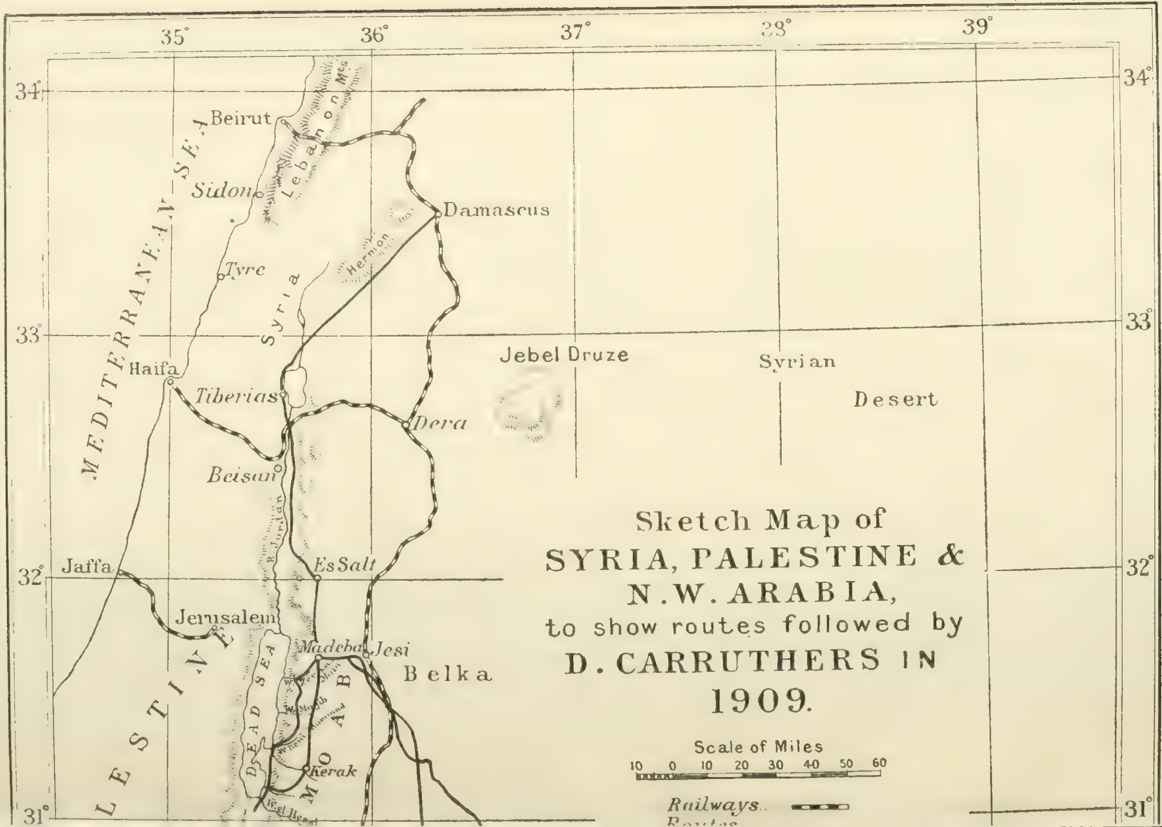
The vegetation of these different zones varies a great deal. In the Dead Sea Basin it is of almost tropical luxuriance; in many places palms, oleanders, and acacias form an impenetrable jungle. In the Ghor es Sarfeh, at the south end of the Dead Sea, there is an especially dense jungle of thorn-scrub, tamarisk, and a tall grass (*Saccharum ægyptiacum*). The wadis that drain into the Dead Sea are also full of growth, but the hills are generally very barren.

The Moab Plateau affords fairly good pasturage for flocks and herds, and is inhabited by a considerable variety of birds and mammals, while the inner deserts are much more sterile and almost uninhabited. The north-western portion of Arabia is composed of limestone steppes, sand-dunes, barren rocky hills, and a few isolated oases.

The altitudes of these different localities vary from −1292 ft. (below the level of the ocean) in the Dead Sea Basin to +3000 ft. on the Moab Plateau. The greater part of N.W. Arabia has an altitude of over 2000 ft.

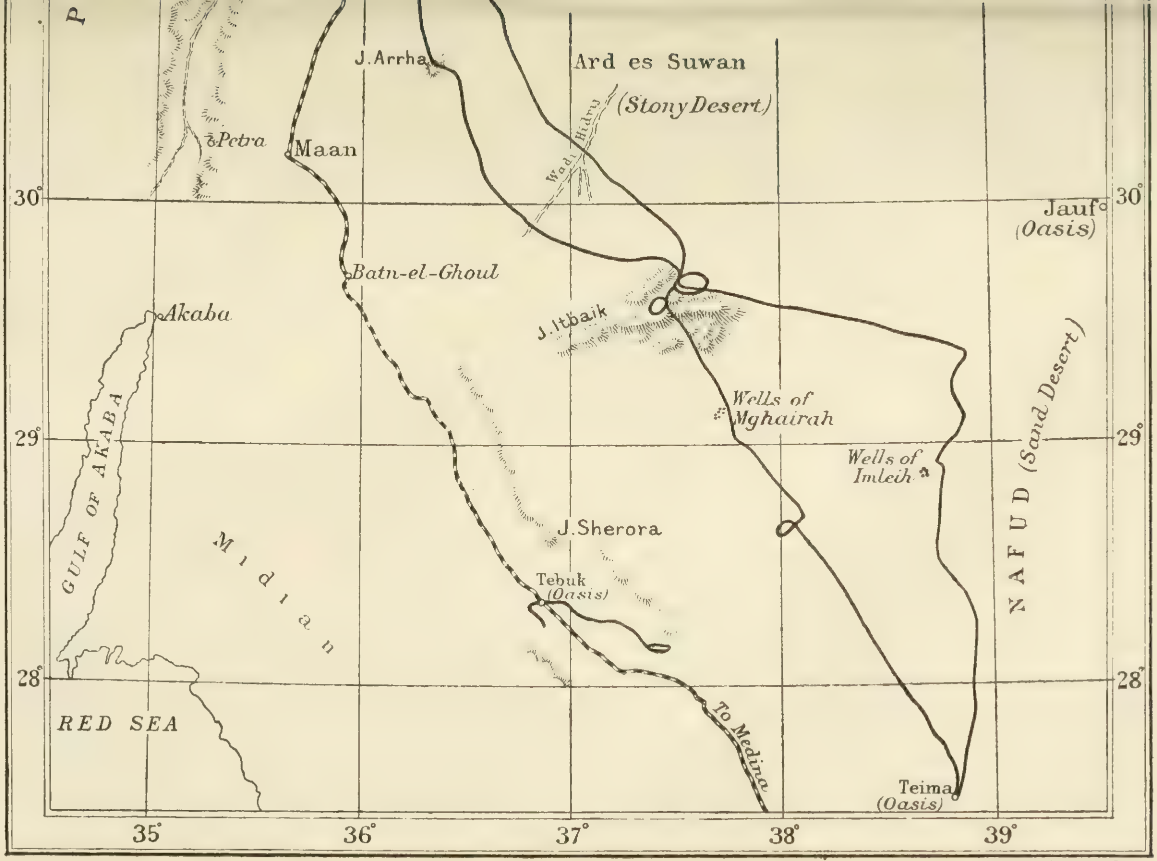
The great trench which holds the Jordan River and the Dead Sea, being one of the most remarkable physical features in the world, contains an interesting fauna.

The Moab Sparrow (*Passer moabiticus*), for instance, is not only confined to this limited region, but is only found in three little isolated areas of jungle at the most southern and lowest portion of the Depression. This is also the only locality in the Palæarctic Region where a species of the genus *Cinnyris* occurs (*C. osea*), which shews the affinities of the fauna of Palestine to that of the Ethiopian Region. This bird, however, seems to have extended its range out of



Sketch Map of
SYRIA, PALESTINE &
N.W. ARABIA,
to show routes followed by
D. CARRUTHERS IN
1909.

35°
36°
37°
38°
39°
34°
33°
32°
31°
Beirut
Lebanon Mts.
Sidon
Damascus
Hermon
Tyre
Syria
MEDITERRANEAN SEA
Haifa
Tiberias
Jebel Druze
Syrian
Desert
Dera
Beisan
R. Jordan
Jaffa
Es Salt
Jerusalem
Madeba
Jesi
Belka
DEAD SEA
MOAB
Kerak
PALESTINE
Scale of Miles
10 0 10 20 30 40 50 60
Railways


P
J.Arrha
Ard es Suwan
(Stony Desert)
Wadi Hidruj
Petra
Maan
30°
Jauf
(Oasis)
Batn-el-Ghoul
Akaba
J.Itbaik
Wells of
Mghairah
Wells of
Imleih
GULF OF AKABA
29°
NAFUD (Sand Desert)
Midian
J.Sherora
Tebuk
(Oasis)
28°
RED SEA
To Medina
Teima
(Oasis)
35°
36°
37°
38°
39°

Leonardson & C°

the Depression to the coast-region, where it is found from Jaffa to Beirut.

Other remarkable birds, typical of the vicinity of the Dead Sea, are the Fan-tailed Raven (*Corvus affinis*), Tristram's Grackle (*Amydrus tristrami*), the Palestine Bush-Babbler (*Argya squamiceps*), and the Chat-Robin (*Cercomela melanura*).

In January 1909 I made a collection at the Oasis of Tebuk and in the surrounding district. During February and March I travelled over the country which extends from the Dead Sea south-eastwards to the borders of Nejd in Central Arabia. This land was, of course, very poor in bird-life, but two especially interesting observations were made, namely, the occurrence in N.W. Arabia of the Ostrich and of a peculiar Lark (*Ammomanes saturatus*), the latter having hitherto only been recorded from Abyssinia and Southern Arabia. Travel in this region was extremely hazardous, and necessity forced me to journey fast from well to well; thus collecting was almost impossible. Many of the specimens which I preserved were skinned as I rode along on camel-back.

After my return from the desert-region, a journey was made on foot over the rough country that borders the Dead Sea on the east. The hot-springs of Callirhoe in the Wadi Zerka Main were visited, the Wadis Beni Hammad, Numeira, and Hessi were explored, and the jungle-covered shores of the sea itself, at Ghor el Mezreh and Ghor es Sarfeh, were fairly well worked.

The return journey led, *viâ* Kerak and Madeba, to Salt, and thence, *viâ* the Jordan Valley, to Tiberias and Damascus.

This collection was made expressly for the museum of the American College in Beirut, and I should advise any member of the British Ornithologists' Union who happens to pass through Syria to make a point of visiting that museum, where he will find a very representative collection of the fauna of Syria and Palestine.

The following list of birds contains the names of those which I obtained on these journeys. Specimens of most of them were collected and preserved, but in a few cases they were only "observed." References to Tristram's 'Fauna and Flora of Palestine' are added, and quoted as "Tristram, Pal."

There are 54 species enumerated in my List and 4 others in the Appendix. Of these, five are not included in Tristram's work, namely, *Ammomanes cincturus*, *A. saturatus*, *Lanius dealbatus*, *Parus cæruleus*, and *Porzana bailloni*.

1. CORVUS AFFINIS.

Corvus affinis Tristr. Pal. p. 76; Sharpe, Cat. B. iii. p. 46.

a. ♂. Wadi Beni Hammad, E. of Dead Sea. 29 April, 1909.

b. ♀. Wadi Numeira, E. of Dead Sea. 6 May, 1909.

The Fan-tailed Raven is confined, in Palestine, to the Dead Sea region. It is fairly common in the ravines on the eastern side of the Depression, where I have seen a flock of no less than eight together. The birds are also occasionally seen in company with Common Ravens, but are easily distinguished from them by their short, rounded tails, which are very noticeable. They have, moreover, a very different and much more musical cry. I found them nesting on the 28th of April.

2. CORVUS COLLARIS.

Corvus monedula Tristr. Pal. p. 75.

Colæus collaris Sharpe, Cat. B. iii. p. 27.

Jackdaws were very common in the declivities of the Moab Plateau. All the specimens I obtained seemed to belong to the white-collared race of *Corvus monedula*. Tristram also noted this, but did not give specific value to the white-collared variety.

3. AMYDRUS TRISTRAMI.

Amydrus tristrami Tristr. Pal. p. 74.

Hagiopsar tristrami Sharpe, Cat. B. xiii. p. 168.

a. ♂; *b.* ♀. Wadi Hessi, S.E. of Dead Sea. 2 May, 1909.

Large colonies of these birds haunt the rock-gorges in the wadies that run into the Dead Sea from the east. These specimens were obtained at 1000 ft. below the level of the Mediterranean.

4. PETRONIA STULTA.

Petronia stulta Tristr. Pal. p. 68; Sharpe, Cat. B. xii. p. 289.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 24 April, 1909.

This bird is fairly common in the rock-country near the Dead Sea, but does not extend far into Arabia proper.

5. PASSER MOABITICUS.

Passer moabiticus Tristr. Pal. p. 68; Sharpe, Cat. B. xii. p. 321.

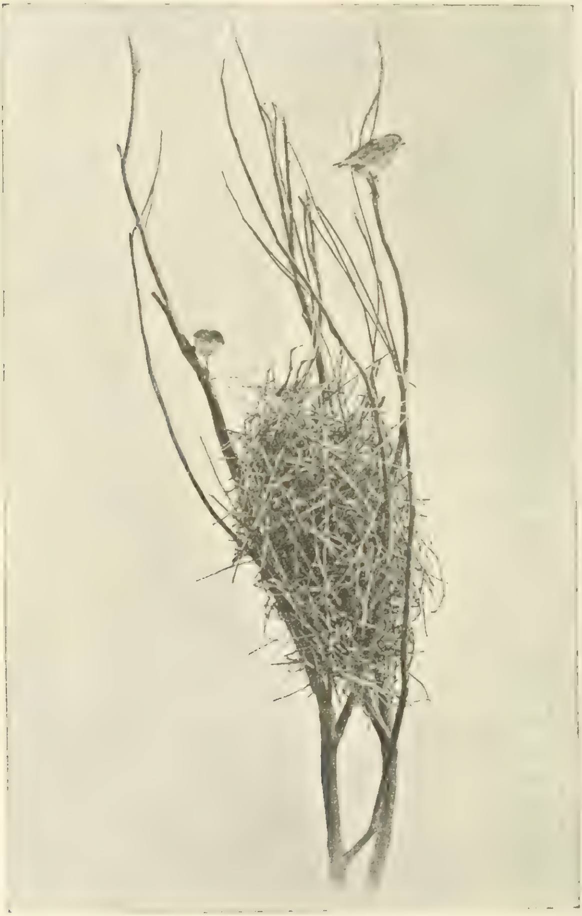
a–c. ♂.	South end of Dead Sea.	3 May, 1909.
d–f. ♀.	,, ,,	2 & 3 May, 1909.

This handsome Sparrow is peculiar to the southern coast of the Dead Sea Depression, and, so far, has only been recorded from three localities, namely, at two spots on the S.W. shore, and again in the reed-beds at the S.E. corner of the Sea. Its range is therefore extremely limited.

I found it breeding in some numbers in the jungle that surrounds the mouth of Wadi el Hessa, in the Ghor es Sarfeh. This jungle borders the Dead Sea on the extreme south-east, and is composed of tamarisk and tall reeds, which grow to a height of 15 ft. The Sparrows were not numerous, and were very shy and wild. Their note is sparrow-like, but easily distinguished from that of any other Sparrow. The nests were built at a height of from six feet to twenty feet above the ground, and were placed in the branches of the tamarisk. In the wet swampy places, where men could not walk, the nests were placed low down, but on the hard ground they were built in the topmost slender twigs of the trees. The nests themselves (see text-fig. 5, p. 480) were large structures made of thorny twigs, interwoven very firmly, and the entrance-hole at the top was completely covered over; in fact, no entrance-hole could be distinguished, even at close quarters. Inside, the nest was very deep and thickly padded with the "down" of the tall grass *Saccharum ægyptiacum,* and occasionally with feathers.

These nests were not built in large colonies, but there were generally three or four placed together.

Text-fig. 5.



Nest of *Passer moabiticus.*

During the first week in May most of the nests contained the full clutches of eggs, which appeared to be only four in number. But during that week I also noticed some birds building their nests, the males and the females alike taking part in the work.

Out of the numerous clutches of eggs that I took, it was noticeable that three of the same clutch were always alike, whilst the fourth was always different. They measured from 1·9 to 2·1 by 1·3 inches.

6. ERYTHROSPIZA GITHAGINEA.

Erythrospiza githaginea Tristr. Pal. p. 70; Sharpe, Cat. B. xii. p. 284.

a. ♂; *b*, *c*. ♀; *d*. Sex doubtful. Tebuk, N.W. Arabia, 1 Jan., 1909.

Large flocks of these Desert Bullfinches used to come to drink at the water-holes near the Oasis of Tebuk.

7. EMBERIZA HORTULANA.

Emberiza hortulana Tristr. Pal. p. 71; Sharpe, Cat. B. xii. p. 530.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 24 April, 1909.

8. ALÆMON DESERTORUM.

Certhilauda alaudipes Tristr. Pal. p. 77.

Alæmon desertorum Sharpe, Cat. B. xiii. p. 519.

a. ♀; *b.* ♂. Tebuk, N.W. Arabia. 2 Jan., 1909.

This is a somewhat rare bird. I only saw it on two occasions during a journey of many hundreds of miles. The two localities were at the Oasis of Tebuk and on the confines of the Nafud Sand-desert.

9. OTOCORYS BILOPHA.

Otocorys penicillata Tristr. Pal. p. 81.

Otocorys bilopha Sharpe, Cat. B. xiii. p. 537.

A few examples of the Algerian Shore-Lark were seen, and one was obtained near a well between the Oasis of Teima and Jauf in North-western Arabia.

10. MELANOCORYPHA CALANDRA.

Melanocorypha calandra Tristr. Pal. p. 81; Sharpe, Cat. B. xiii. p. 551.

a. ♂. Madeba, E. of Dead Sea. 22 April, 1909.

Very common in spring and summer on the corn-lands of Moab.

11. CALANDRELLA BRACHYDACTYLA.

Calandrella brachydactyla Tristr. Pal. p. 80; Sharpe, Cat. B. xiii. p. 580.

a. ♂. Madeba, E. of Dead Sea. 22 April, 1909.

12. AMMOMANES DESERTI.

Ammomanes deserti Tristr. Pal. p. 79.

Ammomanes deserti isabellina Hartert, Vög. Pal. Faun. i. p. 223.

a. ♀. Wadi Zerka Main, E. of Dead Sea. 25 April, 1909.

b. ♀. Tebuk, Hedjaz Railway. 1 Jan., 1909.

Fairly common wherever there are rocky hills in desert regions.

13. AMMOMANES CINCTURUS.

Ammomanes cinctura Sharpe, Cat. B. xiii. p. 644.

a, b. ♂. South end of Dead Sea. 1 May, 1909.

c. Sex doubtful. Teima, N.W. Arabia. 1 March, 1909.

The occurrence of this Lark in the Dead Sea Basin makes an addition to the list of Palestine birds. It is easily distinguished from *Ammomanes deserti* by the black edging to the tail.

14. AMMOMANES SATURATUS.

Ammomanes saturatus Grant, Nov. Zool. vol. vii. 1900, p. 249.

a. ♂; *b.* ♀. Tebuk, Hedjaz Railway. 4 Jan., 1909.

This specimen agrees with those obtained in Southern Arabia by the Percival-Dobson Expedition. Mr. Percival states that it is essentially a hill-bird, and is never seen on the plains; but I found it on the northern deserts far away from any hill-country.

As this species has been hitherto only recorded from Abyssinia and S. Arabia, the extension of its range northwards, as far as the Land of Midian, is of interest.

15. CINNYRIS OSEA.

Cinnyris osea Tristr. Pal. p. 63; Gadow, Cat. B. ix. p. 53.

A few specimens of this Sun-bird were observed in the Ghor es Sarfeh at the south end of the Dead Sea.

The range of this species is greater than was first believed by Tristram, who recorded it only from the Jordan Depression and from near Mount Carmel. Dr. Merrill (see 'Ibis,' 1903, p. 326) widened the range to include Jaffa, whilst I have obtained it as far south as Petra, between the Dead Sea and the Gulf of Akaba, and as far north as the coast-town of Beirut in Syria. The following authentic cases of its occurrence so far north are of interest.

♂. Beirut, Syria. 8 Sept., 1877.
♀. „ „ 27 Nov., 1880.
♂. Alma, S. of Tyre. 5 April, 1904.

The last specimen I obtained myself; the others are in the collection of the American College, Beirut.

16. PARUS MAJOR.

Parus major Tristr. Pal. p. 52; Gadow, Cat. B. viii. p. 19.

The Great Tit was observed on one occasion in the Wadi el Wali, east of the Dead Sea, on the 28th April, 1909. At that season the young were fully fledged.

17. LANIUS MINOR.

Lanius minor Tristr. Pal. p. 58; Gadow, Cat. B. viii. p. 235.

a. ♂. South-eastern shore of the Dead Sea. 1 May, 1909.

18. LANIUS DEALBATUS.

Lanius dealbatus Grant, Nov. Zool. vol. ix., Dec. 1902, p. 458.

a. ♂. Tebuk, N.W. Arabia. 2 Jan., 1909.

19. SYLVIA CONSPICILLATA.

Sylvia conspicillata Tristr. Pal. p. 40; Seebohm, Cat. B. v. p. 22.

a, b. ♂. Wadi Mojib, E. of Dead Sea. 29 April, 1909.

The Spectacled Warbler was occasionally met with in the scrub on the open desert and in the dry wadis.

20. SYLVIA ORPHEA.

Sylvia orphea Tristr. Pal. p. 41 ; Seebohm, Cat. B. v. p. 14.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 27 April, 1909.

21. SYLVIA RUEPPELLI.

Sylvia rueppelli Tristr. Pal. p. 42 ; Seebohm, Cat. B. v. p. 12.

A few specimens of Rüppell's Warbler were observed in the fruit-trees of the Oasis of Teima on February the 22nd.

22. HYPOLAIS PALLIDA.

Hypolais pallida Tristr. Pal. p. 45 ; Seebohm, Cat. B. v. p. 82.

a. ♂. Wadi Zerka Main. 25 April, 1907.

Very common in the oleander groves in the gorges on the east of the Dead Sea.

23. AEDON GALACTODES.

Aedon galactodes Tristr. Pal. p. 46 ; Seebohm, Cat. B. v. p. 34.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 27 April, 1909.

b. ♂. S. end of Dead Sea. 6 May, 1909.

24. ACROCEPHALUS PHRAGMITIS.

Acrocephalus phragmitis Tristr. Pal. p. 48 ; Seebohm, Cat. B. v. p. 91.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 25 April, 1909.

25. SCOTOCERCA INQUIETA.

Drymœca inquieta Tristr. Pal. p. 50.

Scotocerca inquieta Sharpe, Cat. B. vii. p. 213.

a. ♂. Tebuk, N.W. Arabia. 2 Jan., 1909.

b. ♂. Wadi Mojib, E. of Dead Sea. 29 April, 1909.

c. ♀. Tebuk, N.W. Arabia. 2 Jan., 1909.

d. ♂. Wadi Numeira, E. of Dead Sea. 6 May, 1909.

Fairly common in the scrub on the open desert and in the broken country near the Dead Sea.

26. DRYMŒCA LEPIDA.

Burnesia lepida Sharpe, Cat. B. vii. p. 211.

a. ♂. South end of Dead Sea. 6 May, 1909.

b. ♂. South-east shore of Dead Sea. 1 May, 1909.

c. ♂. Wadi Zerka Main, E. of Dead Sea. 25 April, 1909.

d. ♀. South end of Dead Sea. 6 May, 1909.

These specimens undoubtedly belong to the Indian form of *Drymœca gracilis,* which is the common Wren-Warbler of the maritime plain of Syria and Palestine. *Drymœca lepida* has not been recorded before from these localities, but its occurrence is not unexpected, for it has been obtained in Egypt and at Fao on the Persian Gulf.

27. ARGYA SQUAMICEPS.

Argya squamiceps Tristr. Pal. p. 49; Sharpe, Cat. B. vii. p. 395.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 24 April, 1909.

b, c. ♀. South end of Dead Sea. 1–6 May, 1909.

d. ♀. Tebuk, N.W. Arabia. 2 Jan., 1909.

This Babbler is very common in the wadis on the east side of the Dead Sea, and is also found sparsely throughout North-western Arabia.

28. CERCOMELA MELANURA.

Cercomela melanura Tristr. Pal. p. 35.

Myrmecocichla melanura Seebohm, Cat. B. v. p. 360.

a. ♂; *b.* ♀. Wadi Zerka Main, E. of Dead Sea. 27 April, 1909.

Apparently the range of this Chat-Robin in Palestine is confined to the rocky gorges in the Dead Sea Depression, where it is most numerous about ocean-level, and does not seem to descend further into the Depression. At this altitude the birds breed early, and by the middle of April the young are fully fledged.

29. SAXICOLA MORIO.

Saxicola leucomela Tristr. Pal. p. 35.

Saxicola morio Seebohm, Cat. B. v. p. 372.

Of this species one specimen was obtained and a few others observed at the well of Mghairah, between the Oasis of Tebuk and Jauf in North-western Arabia.

30. SAXICOLA LEUCOPYGA.

Saxicola leucopyga Tristr. Pal. p. 35; Seebohm, Cat. B. v. p. 374.

a. ♂; *b.* ♀ imm.; *c.* ♀. Tebuk, N.W. Arabia. 1 Jan., 1909.

d. ♂. Wadi Numeira, E. of Dead Sea. 6 May, 1909.

A few of these Chats (both immature with black head and adult with pure white crown and nape) were to be seen haunting the scrub near a well in the open deserts south of Tebuk. I afterwards found a few in the gorges on the east side of the Dead Sea, but they were nowhere numerous.

31. SAXICOLA MELANOLEUCA.

Saxicola melanoleuca Tristr. Pal. p. 33; Seebohm, Cat. B. v. p. 385.

a. ♂. Belka, E. of Dead Sea. 8 Feb., 1909.

32. SAXICOLA MŒSTA.

Saxicola mœsta Tristr. Pal. p. 34; Seebohm, Cat. B. v. p. 382.

a. ♂. 150 miles S.E. of Dead Sea. 8 Feb., 1909.

33. SAXICOLA DESERTI.

Saxicola deserti Tristr. Pal. p. 33; Seebohm, Cat. B. v. p. 383.

a. ♂. Tebuk, N.W. Arabia. 6 Jan., 1909.

34. PYCNONOTUS XANTHOPYGUS.

Pycnonotus xanthopygus Tristr. Pal. p. 57; Sharpe, Cat. B. vi. p. 135.

a. ♂. Wadi Zerka Main, E. of Dead Sea. 27 April, 1909.

This is a rather rare bird in the country east of the Dead Sea and the Jordan Depression. It descends to the lowest part of the Depression, being found in the Ghor el Mezreh (—1280 ft.).

35. HIRUNDO RUSTICA.

Hirundo rustica Tristr. Pal. p. 61; Sharpe, Cat. B. x. p. 128.

A few Swallows were observed as early as the 16th of February in the desert, near the Oasis of Teima.

36. DENDROCOPUS SYRIACUS.

Picus syriacus Tristr. Pal. p. 85.

Dendrocopus syriacus Hargitt, Cat. B. xviii. p. 225.

a. ♂. Wadi Wali, E. of the Dead Sea. 28 April, 1909.

I saw only a few of these Woodpeckers in the steep gorges that furrow the declivities of the Moab Plateau. Tristram mentions that they never descend into the Jordan Valley, so it is worthy of notice that this specimen was obtained in the Dead Sea Depression just below ocean-level.

37. CYPSELUS AFFINIS.

Cypselus affinis Tristr. Pal. p. 83; Hartert, Cat. B. xvi. p. 453.

In the Oasis of Teima, in N.W. Arabia, I observed two or three examples of the White-rumped Swift in Feb. 1909.

38. CAPRIMULGUS EUROPÆUS.

Caprimulgus europæus Tristr. Pal. p. 84; Hartert, Cat. B. xvi. p. 526.

a. ♀. Dead Sea Depression. 2 May, 1909.

39. UPUPA EPOPS.

Upupa epops Tristr. Pal. p. 89; Salvin, Cat. B. xvi. p. 4.

A single Hoopoe was observed on the barren desert north of the Oasis of Teima on the 18th of February.

40. MEROPS PERSICUS.

Merops persicus Tristr. Pal. p. 88; Sharpe, Cat. B. xvii. p. 66.

a. ♀.	South shore of Dead Sea.	1 May, 1909.
b, c. ♂.	,, ,,	6 May, 1909.
d. ♀.	,, ,,	8 May, 1909.

The Blue-cheeked Bee-eater was only seen in the southern part of the Dead Sea Depression, in the Ghor el Mezreh and the Ghor es Sarfeh. During three seasons in Syria and Palestine this was the only locality where I came across it.

41. HALCYON SMYRNENSIS.

Halcyon smyrnensis Tristr. Pal. p. 87; Sharpe, Cat. B. xvii. p. 222.

This is a common bird on the mountain-torrents that flow into the Dead Sea from the east, where it feeds on the shoals of fish that inhabit all those streams.

I never saw the Pied Kingfisher in the vicinity of the Dead Sea, but on the Upper Jordan and on the Sea of Tiberias *Ceryle rudis* is the commoner bird and *Halcyon smyrnensis* the rarer.

42. CURSORIUS GALLICUS.

Cursorius gallicus Tristr. Pal. p. 128; Sharpe, Cat. B. xxiv. p. 34.

a. ♀. Teima, N.W. Arabia. 28 Feb., 1909.

This bird was seen on the deserts near the Oases of Tebuk and Teima.

43. SCOLOPAX RUSTICULA.

Scolopax rusticula Tristr. Pal. p. 132; Sharpe, Cat. B. xxiv. p. 671.

I saw the Common Woodcock on one occasion in the Oasis of Teima.

44. TURTUR COMMUNIS.

Turtur communis Tristr. Pal. p. 120; Salvadori, Cat. B. xxi. p. 396.

This Dove is very common in the oleander groves in the declivities of the Moab Plateau.

45. PTEROCLES ARENARIUS.

Pterocles arenarius Tristr. Pal. p. 122; Grant, Cat. B. xxii. p. 18.

Large flocks of this Sandgrouse were observed in the Belka country in the Land of Moab, but during my three hundred miles' journey to the south-east of that district I never saw any of this species.

46. Pterocles senegallus.

Pterocles senegallus Tristr. Pal. p. 122; Grant, Cat. B. xxii. p. 14.

At one place in N.W. Arabia, where there was water near the surface, I saw countless numbers of Senegal Sandgrouse. This was at a well between the Oasis of Tebuk and Jauf.

47. Caccabis chucar.

Caccabis chucar Tristr. Pal. p. 123; Grant, Cat. B. xxii. p. 113.

a. ♂. Wadi Mojib, E. of Dead Sea. 29 April, 1909.

The Chucar Partridge is found in great numbers in the rough hill-country on the east of the Dead Sea and throughout N.W. Arabia wherever there are hills. On the 27th of April the young were hatched, but the old birds still kept in large coveys and were seldom seen in pairs or singly.

The common native name for the Chucar in Syria is "Hajal," but in the country east of the Dead Sea it is called "Shinnar," whilst the little Sand-Partridge, which is unknown in Syria, is called by the name of "Hajal."

48. Ammoperdix heyi.

Ammoperdix heyi Tristr. Pal. p. 123; Grant, Cat. B. xxii. p. 125.

a, *b.* ♂. Wadi Zerka Main, E. of Dead Sea. 25 April, 1909.

c. ♀. Wadi Zerka Main, E. of Dead Sea. 27 April, 1909.

d. ♀. S.E. shore of Dead Sea. 1 May, 1909.

Hey's Sand-Partridge is common in the Jordan Valley and Dead Sea Depression. It is seldom met with above −500 ft. Its northward range is limited by the region of Beisan, about fifteen miles south of the Sea of Tiberias.

In the Arabian deserts I also found it wherever there were hills, and there it lived at a higher altitude.

The birds breed early in May, and it is noteworthy that even whilst breeding they still retain the habit of going in coveys rather than in pairs. Sometimes they are to be seen in company with the Chucar Partridge.

49. STRUTHIO CAMELUS.

Struthio camelus Tristr. Pal. p. 139; Salvadori, Cat. B. xxvii. p. 572.

This Ostrich was observed in one locality in N.W. Arabia, namely in the Wadi Hidrij, a hundred and twenty miles south-east of the Dead Sea. I chanced to ride up to some at fairly close quarters in the rolling black-stone desert, called Ard-es-Suwan by the Beduin. Further to the south-east I occasionally saw traces of them, and on the western sand-dunes of the Nafud I found broken eggs. I also saw their tracks close to the Mecca Railway near the Oasis of Tebuk. I should say that this railway marks the extreme western range of the Ostrich in Arabia. Northwards they do not extend beyond the 31st parallel, and they do not pass into the Syrian Hamad.

APPENDIX.

Specimens of the four species in the subjoined List were not obtained on this journey, but their names are of interest as being new to the List of Syrian Birds. There are examples of them in the Museum at the American College in Beirut.

The main authority on the Ornithology of Syria and Palestine is, of course, Canon Tristram's 'Fauna and Flora of Palestine.' This was supplemented by Dr. Merrill's notes published in 'The Ibis' in 1903 (p. 324). In April 1906, an account of my own collection in Syria was published by Dr. Sclater in this Journal (p. 307); and these few additions bring the ornithology of the region up to date.

1. PARUS CÆRULEUS.

Parus cæruleus Gadow, Cat. B. viii. p. 12.

♂.	Damascus.	17 Sept., 1904.
♂.	,,	18 Sept., 1904.
♂.	,,	20 Sept., 1904.

The Blue Tit is resident in the cultivated area round Damascus; but it seems to have been overlooked, for it has never been recorded hitherto from Syria.

2. Sula bassana.

Sula bassana Grant, Cat. B. xxvi. p. 425.

Beirut, Syria. 1 March, 1894.

The occurrence of the Gannet at the eastern end of the Mediterranean Sea is of interest. The nearest locality from which it has been recorded hitherto is the north-west coast of Africa.

A single example was obtained by Prof. A. E. Day, of the American College at Beirut. It is an adult female in fine plumage.

3. Puffinus kuhli.

Puffinus kuhli Salvin, Cat. B. xxv. p. 375.

♀. Beirut, Syria. 11 April, 1878.
♀. „ „ 22 May, 1878.

The Mediterranean Shearwater is not recorded by Tristram in his 'Fauna of Palestine,' but I find that he mentions it in his notes on the Ornithology of Palestine in the 'Ibis' of 1868 (p. 331), under the name of *Puffinus barolii.*

4. Porzana bailloni.

Porzana bailloni Sharpe, Cat. B. xxiii. p. 103.

Karyatein, Syrian desert. 3 March, 1905.

Tristram did not obtain this bird in Syria or Palestine, but suspected its occurrence.

XXII.—*On a Collection of Birds from the South Coast of the Caspian Sea and the Elburz Mountains.* By Harry F. Witherby, F.Z.S., M.B.O.U. *With Field-Notes by* R. B. Woosnam, M.B.O.U.

This second collection of birds made by Mr. R. B. Woosnam in Persia has been presented, like the first (see 'Ibis,' 1907, p. 74 *et seqq.*), to the British Museum by Colonel A. C. Bailward, with whom Mr. Woosnam travelled. I am again much indebted to the authorities of the British Museum for allowing me to work out this collection—a task which has interested me greatly.

The journey undertaken by Col. Bailward and Mr. Woosnam on this occasion was made between February 12th and May 20th, 1907. They proceeded along the south coast of the Caspian Sea from Resht to Bundar Gez on Asterabad Bay, thus passing through the provinces of Gilan and Mazandaran. From Bundar Gez they struck south across the Elburz Mountains to Tehran, passing Mount Demavend. From Tehran they proceeded along the highroad back to Resht, down the great valley of the Sufid Rud.

The collection is especially interesting as shewing a very sharp distinction between the Avifauna of the Persian Plateau and that of the Caspian Provinces. Although this distinction was clearly pointed out by Blanford (in his 'Eastern Persia'), it is, nevertheless, still more clearly demonstrated by a deeper study of nearly allied races. Taking the more sedentary birds, we find the following closely allied forms divided by the Elburz Mountains:—

Caspian Region.	Persian Plateau.
Syrnium aluco aluco.	*Syrnium aluco sancti-incolai.*
Dendrocopus major pœlzami.	*Dendrocopus major syriacus.*
Dendrocopus minor danfordi.	*Dendrocopus minor morgani.*
Gecinus viridis viridis.	*Gecinus viridis innominatus.*
Cinclus cinclus caucasicus.	*Cinclus cinclus persicus.*
Sitta europæa cæsia.	*Sitta europæa persica.*
Sitta neumayeri neumayeri.	*Sitta neumayeri tschitscherini.*
Parus major major.	*Parus major blanfordi.*
Parus lugubris hyrcanus.	*Parus lugubris dubius.*

A number of European birds also migrate to the Caspian provinces in winter, and do not seem to penetrate the mountain-barrier, while the generally more European character of the birds of this region as compared to those of the Plateau is very marked.

As to where the dividing-line lies, Mr. Woosnam remarks: "So soon as the northern afforested slopes of the Elburz range are passed we come quite suddenly into the dry barren rocky country typical of the central and southern plateau of Persia. Immediately all the plateau birds so familiar in the Zagros Mountains and elsewhere appear."

This is interesting confirmation of Blanford's definition of the Caspian region as ending with the forest on the slopes of the Elburz Mountains. It would thus seem that climatic conditions and consequent changes in environment are responsible for the division rather than the actual mountain-barrier.

In the following pages I have referred to Blanford's 'Eastern Persia,' vol. ii. as B. for the sake of brevity, and in the same way my articles in the 'Ibis' for 1903 and 1907 are referred to as W. 1903 and W. 1907. An asterisk prefixed to either of these initials indicates that no specimen of the bird in question was obtained.

FALCO ÆSALON Tunstall. [*B. 105.]

♂. March 22, south coast, Caspian Sea.

This specimen is very pale and has very few stripes on the breast.

The Merlin does not appear to have been recorded hitherto from Persia. It is probably only a winter visitor to the northern parts of that country.

ACCIPITER NISUS (L.). [B. 109. W. 1907, p. 77.]

♀. Feb. 16, S. coast, Caspian Sea.

"A few Sparrow-Hawks were seen in the forests of Mazandaran, but this was not at all a common bird."—R. B. W.

SCOPS GIU (Scop.). [B. 115. W. 1903, p. 560.]

Three in May from the Elburz Mts. (near Tehran, alt. 7000 ft.).

"Not seen on the north side of the mountains."—R. B. W.

SYRNIUM ALUCO ALUCO (L.). [W. 1903, p. 560.]

♂. April 5, S. coast, Caspian Sea.

"The only specimen seen; we never heard them at night."—R. B. W.

This is a dark brown example with scarcely any rufous, and is much striated on the breast and particularly dark on the nape and mantle. It is thus very different from the pale and faintly marked Tawny Owl which I obtained in

S.W. Persia, and which has been separated by M. Zarudny under the name of *Syrnium sancti-nicolai* (Orn. Monatsb. 1905, p. 49).

The Tawny Owl seems a rare bird in Persia.

ASIO ACCIPITRINUS (Pall.). [*B. 116. *W. 1903, p. 560; 1907, p. 77.]

♀. March 12, S. coast, Caspian Sea.

"Quite common on the low ground near the coast; we often put up five or six at one spot."—R. B. W.

ALCEDO ISPIDA BENGALENSIS (Tacz.).

♂. Feb. 23, S. coast, Caspian Sea.

"Not uncommon in Mazandaran and to be seen in the gardens of Tehran; the only species of Kingfisher observed."—R. B. W.

This specimen, owing to its small size (wing 73 mm.), must be referred to this form, although it is curious that according to Blanford the Kingfisher of the Persian Plateau appears to be of the typical form.

CORACIAS GARRULUS L. [B. 125. W. 1903, p. 559; 1907, p. 78.]

A male from the Elburz Mts. (near Demavend, alt. 7500 ft.), on April 28.

"Plentiful round Tehran; we were probably too early for them on the north side of the mountains."—R. B. W.

PICUS MARTIUS L.

♀. Feb. 27, S. coast, Caspian Sea.

"A single pair was seen, but afterwards we several times heard a note which we thought might have been that of this species."—R. B. W.

The Black Woodpecker does not appear to have been recorded previously from Persia, although its presence in the Caspian Provinces is not unexpected.

DENDROCOPUS MAJOR PŒLZAMI (Bogd.).

Four from the S. coast of the Caspian Sea in February.

"Very plentiful throughout the wooded country both on the plain and in the hills."—R. B. W.

Dendrocopus major syriacus (H. & E.). [B. 130. W. 1903, p. 554; 1907, p. 79.]

A male from Tehran in April.

In Persia this form appears to be confined to the Plateau, and is replaced in the Caspian forests by the dark-breasted *D. m. pœlzami.* Mr. Woosnam says (*in litt.*) that a Great Spotted Woodpecker was to be found high up in the mountains, but as he obtained no specimens it is impossible to say exactly where is the dividing-line of the two forms.

Dendrocopus minor danfordi (Harg.).

♂. Feb. 23; ♀. March 29, S. coast, Caspian Sea.

"The only two seen, but probably not rare in the Mazandaran forests."—R. B. W.

These agree well with the type and are unlike the Lesser Spotted Woodpecker of S.W. Persia (*cf.* 'Ibis,' 1903, p. 555), which has been separated by M. Zarudny and Baron Loudon under the name *Dendrocopus minor morgani* (Ornith. Jahrb. xv. 1904, p. 227).

Gecinus viridis viridis (L.).

Four from the S. coast of the Caspian Sea in February and March.

"Many were to be seen and they were still more often to be heard in the forest, but they were not so numerous as the Great Spotted Woodpecker, and in the mountains only a few were noticed."—R. B. W.

These are typical examples of the Green Woodpecker and are dark and richly coloured compared to the pale *G. v. innominatus* of the Plateau (*cf.* 'Ibis,' 1907, p. 79).

Lanius excubitor homeyeri Cab.

Hartert, Vög. pal. Fauna, p. 420.

♂. March 30, S. coast, Caspian Sea.

This is a pale form of *L. excubitor.*

The Great Grey Shrikes which I obtained in S.W. Persia (*cf.* 'Ibis,' 1903, p. 533) have been determined by Dr. Hartert as follows:—♂ Kazerun, March 31, and ♂ Konar Takhta, March 28, as *L. e. aucheri*: ♂ Bushire, March 22, and ♂ Nudan, April 16, as *L. e. pallidirostris.*

LANIUS MINOR Gm. [B. 137. W. 1903, p. 534; 1907, p. 80.]

♀. May 6, Elburz Mts. (alt. 6500 ft.).
♂. May 18, S. coast, Caspian Sea (Resht).

LANIUS COLLURIO L. [*B. 137. W. 1903, p. 534; 1907, p. 80.]

♀. May 6, Elburz Mts. (near Tehran, alt. 6000 ft.).
♀. May 15, Elburz Mts. (near Resht, alt. 500 ft.).
♂. May 20, S. coast, Caspian Sea (Resht).

"On our return to Resht, Red-backed Shrikes were often met with among the patches of bush and scrub near the coast. A few were seen at Tehran."—R. B. W.

The Red-backed Shrike is rare in Southern Persia.

MUSCICAPA ATRICAPILLA L. [B. 143. W. 1903, p. 552; 1907, p. 81.]

♂ ♀. April 15, Tehran (alt. 4600 ft.).

"A single pair in a garden, where they were evidently going to breed. None were seen on the north side of the mountains."—R. B. W.

These birds perhaps belong to the form *M. a. semitorquata*, but the skins are indifferent and they bear none of the characters of *M. a. semitorquata* distinctly. The outer pair of tail-feathers of the male have the outer webs white, but there is only a very narrow edging of white on their inner webs. The second pair are white on the outer webs except for half an inch at the tip. The white "collar" does not appear to come further round the back of the neck than in many examples of typical *M. atricapilla*, but the white spot on the primaries is rather distinct.

The example obtained by me at Bushire, which I called *M. atricapilla* ('Ibis,' 1903, p. 552), is an undoubted specimen of *M. a. semitorquata*.

MUSCICAPA PARVA (Bechst.). [B. 144.]

♀. May 16, S. coast, Caspian Sea (Resht).

"The only one seen; shot in a dense part of the forest."—R. B. W.

Pratincola rubicola maura (Pall.). [B. 145. W. 1903, p. 547; 1907, p. 81.]

♂. April 20, Elburz Mts. (near Demavend, alt. 7500 ft.).

Pratincola rubetra (L.). [*B. 146.]

♀. May 20, S. coast, Caspian Sea (Resht).

This specimen appears to me to be of the typical form.

P. r. noskæ Tschusi (Orn. Jahrb. xiii. 1902, p. 234) from the Caucasus is perhaps rather a doubtful form.

In Persia the Whinchat seems to be confined to the northern provinces.

Saxicola œnanthe œnanthe (L.). [B. 146. W. 1903, p. 546; 1907, p. 81.]

Four from the Elburz Mts. in April, and one from the S. coast of the Caspian in May.

All the Common Wheatears from Persia that I have examined are of the typical form.

Saxicola isabellina Cretzschm. [B. 147. W. 1903, p. 546; 1907, p. 81.]

Two males. April 14, Elburz Mts. (south side, alt. 5000 ft.).

Saxicola occidentalis melanoleuca (Güld.). [B. 150. W. 1903, p. 545; 1907, p. 82.]

Six specimens in April and May from the Elburz Mountains, both on the south side and also near Resht (alt. 400–5000 ft.).

Although Blanford considered this a rare Wheatear in Persia it is evident from my own and Mr. Woosnam's former collection that it is fairly evenly distributed over the west and north of the country.

Saxicola chrysopygia (De Fil.). [B. 151. W. 1903, p. 544; 1907, p. 83.]

Four males from the north side of the Elburz Mts. (alt. 3000–8000 ft.) in April, and three specimens from the south side (alt. 5500–6000 ft.) in April and May.

"This Wheatear was met with so soon as we passed through the afforested slopes of the north side of the Elburz

Mountains. It was a common bird and was found so low as 3000 feet."—R. B. W.

It is interesting to find this Wheatear in the north of Persia at lower altitudes than it seems to affect in the south, where Mr. Woosnam and I never met with it below 9000 feet, and then but rarely.

MONTICOLA CYANUS (L.). [B. 155. W. 1903, p. 550; 1907, p. 83.]

Threes from the Elburz Mts. (north side, alt. 5000–8000 ft.) in April.

MONTICOLA SAXATILIS (L.). [B. 156. W. 1903, p. 550; 1907, p. 83.]

One from the Elburz Mts. (near Demavend, alt. 8000 ft.) on April 20.

TURDUS MERULA ATERRIMA Mad.

♂ ♀. March 29 & 31, S. coast, Caspian Sea.

♀ ♀, April 22, ♂ ♀, May 4, Elburz Mts. (north side).

"Not uncommon on the afforested parts of the mountains and lower foot-hills; most plentiful in the oak woods at about 4000 feet."—R. B. W.

I have submitted the specimens to Mr. C. E. Hellmayr, who informs me that he considers them to belong to this form, which was described from the Caucasus. The females are more rufous on the upper breast and the males are blacker than in *T. m. syriacus*, the form found in South-west Persia. The wings measure :—♀, 119–127 mm.; ♂, 127 mm.

TURDUS MUSICUS MUSICUS L. [B. 156. W. 1903, p. 551; 1907, p. 83.]

♂, March 1, ♂, March 6, S. coast, Caspian Sea.

"Song-Thrushes were common all the way along the coast, especially in the pomegranate jungles, where they were feeding upon a large snail which infested the bushes. We did not see any Song-Thrushes in the mountains."—R. B. W.

These examples are not quite so pale as those from Southern Persia.

Turdus viscivorus L. [*B. 157.]

♀. Feb. 24, S. coast, Caspian Sea.

"Mistle-Thrushes were seen here and there all the way from Resht to Bundar Gez, and one specimen was shot in a garden at Tehran. They were not met with in the mountains."—R. B. W.

Turdus iliacus L. [*B. 157.]

♂. March 15, S. coast, Caspian Sea.

"A few small restless flocks were seen at Meshed-i-Ser, but none elsewhere."—R. B. W.

Turdus pilaris L.

♀. March 12, S. coast, Caspian Sea.

"Two or three Fieldfares were seen at Meshed-i-Ser on the same ground as the Redwings."—R. B. W.

The Fieldfare does not appear to have been previously recorded from Persia.

Turdus atrigularis Temm. [B. 158.]

♂. March 30, S. coast, Caspian Sea.

♀. April 15, Tehran (alt. 4600 ft.).

From Mr. Woosnam's notes this species appears to be very rare. Dr. Blanford found it common in winter in Baluchistan, while it was met with by Mr. Cumming at Bushire in February and March (*cf.* 'Ibis,' 1886, p. 495).

Erithacus rubecula hyrcanus Blanf. [B. 160. W. 1907, p. 84.]

♂ ♂. March 27 & 28, S. coast, Caspian Sea.

"A few Robins were seen all along the afforested parts of the Caspian coast."—R. B. W.

Although Mr. Woosnam met with this Robin in the south of Persia in some numbers in March, yet it is found at the same time of year far to the north in its breeding-grounds, which is rather puzzling. Dr. Blanford considered it a North Persian bird. Dr. Bowdler Sharpe recorded it from Fao in October and November.

Ruticilla phœnicurus (L.). [B. 163. W. 1903, p. 547; 1907, p. 84.].

♀. April 15, Tehran. ♂. April 28, Elburz Mts. (Demavend, alt. 6000 ft.).

Ruticilla rufiventris (Vieill.). [B. 163. W. 1903, p. 548.]

♂. April 11, Elburz Mts. (north side, alt. 8000 ft.).

Ruticilla titys (Scop.). [B. 166. W. 1907, p. 85.]

Three specimens, April 10 & 12, Elburz Mts. (north side, alt. 5000 ft.).

"Not a common bird, but seen also among the deep snow at 9000 feet, where it was apparently quite happy."—R. B. W.

Philomela luscinia luscinia (L.).

♂. May 6, Elburz Mts. (near Tehran, alt. 7000 ft.).

This is undoubtedly an example of the western form of Nightingale, and its occurrence so far south-east, especially in May, is most remarkable. Dr. Radde ('Ornis Caucasica,' p. 246, footnote) has stated his belief that its reported occurrence in the Caspian region was a mistake.

Sylvia orphea jerdoni Blyth. [B. 172. W. 1903, p. 541; 1907, p. 86.]

♂. May 15, Elburz Mts. (near Resht, alt. 500 ft.).

The eastern race of the Orphean Warbler is by no means a well-marked form. In this specimen the bill is no longer than that of the typical form; but perhaps the best distinction is in the colour of the flanks, which are never pinkish buff as in the Western European bird.

Sylvia atricapilla (L.). [*B. 174. W. 1903, p. 540; 1907, p. 86.]

♀ ♂. March 4 & 11, S. coast, Caspian Sea.

♂ ♀. April 20, Elburz Mts. (near Tehran, alt. 7500 ft.).

♂. May 15, Elburz Mts. (near Resht, alt. 500 ft.).

Sylvia communis icterops Ménétries (*cf.* Hartert, Vög. pal. F. p. 587).

Sylvia cinerea Bechst. [B. 174. W. 1903, p. 541; 1907, p. 86.]

♂ ♂. May 1, } Elburz Mts. (north side, alt. 500–7000 ft.).
♀. May 15, }

The males are much greyer and not so brown on the upper side as those of the typical Whitethroats, while the edges to the secondaries and greater wing-coverts are of a paler, less rufous brown; the female is pale brown on the upper side. The measurements of both sexes are larger. The two specimens procured by me in Fars also agree with this race.

Sylvia mystacea Ménétr. [W. 1903, p. 539; 1907, p. 86.]

Sylvia rubescens B. 177.

♂. March 18, S. coast, Caspian Sea.

♂. April 6, Elburz Mts. (north side, alt. 2000 ft.).

"Seen for the first time on March 18th, and found again quite numerously among the oak-scrub valleys at 4000 feet on the north side of the mountains."—R. B. W.

Phylloscopus collybita tristis Blyth. [B. 180.]

♂ ♀. March 1, S. coast, Caspian Sea.

♀. April 18, Elburz Mts. (near Tehran, alt. 6500 ft.).

Blanford obtained the Siberian Chiffchaff only in Baluchistan, and it does not appear to have been recorded before from North Persia. Mr. Woosnam notes that Chiffchaffs were first seen "at Resht in the first week of February, when there were at least two feet of snow on the ground," and afterwards throughout the whole journey.

It would seem, therefore, that the bird spends the winter in North Persia.

Phylloscopus trochilus trochilus (L.). [B. 180. W. 1903, p. 539; 1907, p. 87.]

♂. May 4, Elburz Mts. (alt. 7000 ft.).

♂. May 16, S. coast, Caspian Sea.

HYPOLAIS PALLIDA (H. & E.). [B. 187. W. 1903, p. 541; 1907, p. 88.]

♂. May 6, Elburz Mts. (near Tehran, alt. 6500 ft.).

ACROCEPHALUS ARUNDINACEUS ZARUDNYI Hartert, Bull. B. O. C. xxi. p. 26.

♂ (wing 96 mm.); ♂ (wing 98 mm.); ♂ (wing 99 mm.); ♀ (wing 96 mm.); May 20, S. coast, Caspian Sea.

"Very common in May in the dense reed-beds."—R. B. W.

These are undoubtedly breeding birds. Compared to the typical western form they are paler and less rufous on the upper and less buff on the under side. The bird obtained by Mr. Woosnam at Ahwaz (*cf.* Ibis, 1907, p. 88) in Persian Mesopotamia is, however, of the western form.

ACROCEPHALUS PALUSTRIS (Bechst.). [B. 197. W. 1903, p. 543; 1907, p. 88.]

♂. May 15, Elburz Mts. (near Resht, alt. 500 ft.).

ACROCEPHALUS SCHŒNOBÆNUS (L.). [B. 199.]

Four specimens from the S. coast of the Caspian Sea, from May 16 to 20.

Blanford quotes Ménétries as the only authority for the occurrence of the Sedge-Warbler in Persia. Mr. Woosnam has no notes as to whether this and the preceding species were likely to be breeding. Mr. Cumming thought that the bird was a resident at Fao (*cf.* Ibis, 1886, p. 481).

CETTIA CETTI (Marm.). [B. 200. W. 1903, p. 536; 1907, p. 88.]

♂. March 18, S. coast, Caspian Sea.

♂. May 4, Elburz Mts. (north side, alt. 8000 ft.).

"I heard Cetti's Warbler once or twice about the middle of March among swampy thorn-thickets and reeds, and often high up among the mountains, where it was always in the course of some stream."—R. B. W.

The specimen of March 18 is moulting its contour feathers but not the quill feathers of the wings or tail.

Accentor ocularis Radde. [W. 1907, p. 88.]
Accentor jerdoni (nec Brooks). [W. 1903, p. 544.]
♂ ♂ ♀. April 20, } Elburz Mts. near Demavend (alt.
♂ ♂. May 4, } 8000–9000 ft.).
♂ ♂. April 30, Elburz Mts. (north side, alt. 8000 ft.).

"Quite common around the lower slopes of Mt. Demavend and seen so low as 8000 ft."—R. B. W.

In the female the pectoral band is not so bright as in the male, and the crown of the head is not nearly so dark.

Accentor modularis blanfordi Zar. [B. 202.]
♀. March 6, S. coast, Caspian Sea.

"Only met with in the low country or the north side of the mountains."—R. B. W.

I think there is little doubt that this specimen belongs to the form described from the country to the south-west of Ispahan by M. Zarudny (Orn. Monatsb. xii. p. 164), and from the same district by Blanford under the name of *A. rubidus*, Temm. & Schl., var. ('Eastern Persia,' vol. ii. p. 202). The wing-formula in this specimen is similar to that of the British Hedge-Sparrow (*A. m. occidentalis*), the 2nd primary being very slightly longer than the 7th and considerably shorter than the 6th. The whole of the upper parts of the bird are paler, and the head and neck are greyer than in the typical form; the dark portions of the feathers of the mantle are smaller and distinctly less dark, while the rump and upper tail-coverts are more greyish-brown and not so rufous; the greater and median wing-coverts are tipped with white, not buff. The specimen is, however, much worn.

Cinclus cinclus caucasicus Mad. [W. 1907, p. 90.]
♀ ♂. April 22 & 24, Elburz Mts. (north side, alt. 3000 ft.).

This is the form of the Dipper found in Asia Minor and the Caucasus.

"Dippers were seen frequently on the lower streams in the Elburz up to about seven or eight thousand feet, but, as usual, they were almost impossible to pick up when shot."—R. B. W.

Cotile riparia (L.). [B. 216. W. 1903, p. 553; 1907, p. 90.]

♂ ♀. May 20, S. coast, Caspian Sea.

Cotile rupestris (Scop.). [B. 216. W. 1903, p. 553; 1907, p. 90.]

♀. April 20, Elburz Mts. (near Demavend, alt. 7000 ft.).

Troglodytes parvulus Koch. [B. 222.]

♂. March 2, S. coast, Caspian Sea.

"Seen throughout the forest country, on the plains, and on the mountains."—R. B. W.

I cannot distinguish any difference between this specimen and typical examples. The specimen which Mr. Woosnam obtained at Sumela in 1906 (*cf.* Ibis, 1907, p. 92) is worn and no doubt bleached, and it is impossible to judge from an examination of these two skins whether or not *T. p. hyrcanus* Zar. & Loud. (Orn. Monatsb. 1905, p. 106), which is supposed to inhabit the Caspian region, is a valid form.

Sitta europæa cæsia Wolf. [B. 223.]

♂ ♂. March 28 & 29, S. coast, Caspian Sea.

"No Nuthatches were met with in the swampy alder-forests along the coast, but several were seen in the dry beech and hornbeam cover on the foot-hills, and they are probably numerous all along the afforested north side of the Elburz."—R. B. W.

These Nuthatches are very different from the pale form of the Plateau (*S. e. persica*), and they appear to me to resemble in every way typical *S. cæsia.* They have neither the short bill nor the white eye-spot of *S. e. caucasica,* while in *S. rubiginosa* Tsch. & Zar. (Orn. Jahrb. 1905, p. 140) the under side is stated to be brighter than that of *S. cæsia,* but this is not so in these specimens nor is the bill longer. The character of the length of the first primary given for *S. rubiginosa* is quite useless, as this varies greatly in individuals.

SITTA NEUMAYERI NEUMAYERI Michah. [W. 1907, p. 91.]

♂ ♂. April 8,
♂. May 5, } Elburz Mts. (north side, alt. 5000–7000 ft.).

These are typical examples.

PARUS MAJOR MAJOR L. [W. 1907, p. 93.]

Three males and two females, March 4–6, S. coast, Caspian Sea.

" Plentiful throughout the afforested region."—R. B. W.

I cannot distinguish between these specimens and a good series of typical Great Tits. All the characters pointed out by M. Zarudny and Baron Loudon as distinguishing their *P. m. caspius* (Orn. Monatsb. 1905, p. 108) are variable when a large series is examined.

PARUS MAJOR BLANFORDI Prazak. [W. 1907, p. 93.]

♀. April 20, near Tehran (alt. 7000 ft.).

This specimen is distinct from those from the Caspian region, and compares well with others from the Plateau. The type of this race was from Tehran.

PARUS ATER PHŒONOTUS Blanford. [B. 228.]

♀ ♀. Feb. 19,
♀. March 28, } S. coast, Caspian Sea.

♂. April 22,
♂. May 4, } Elburz Mts. (north side, alt. 4000–7000 ft.).

" Not very common."—R. B. W.

These specimens compare well with Blanford's type except that they are rather more greenish and less rich brown on the back, but the type-specimen is in very fresh plumage, and this may account for the slight difference. I do not think that this Tit has been found in South-west Persia since Major St. John obtained those from which the form was described. Is it possible that some mistake was made in the locality and that this race is not found in the south-west of Persia?

PARUS LUGUBRIS HYRCANUS Zar. & Loud. Orn. Monatsb. 1905, p. 76.

♂ ♀. May 1, Elburz Mts. (north side, alt. 7000 ft.).

" Two or three pairs seen in the oak woods."—R. B. W.

Compared with examples of typical *P. lugubris* these specimens are shorter in the bill and tail. They measure:—tail 53–54 mm. against 60–63 in typical specimens; bill (from nostril to tip) 7 mm. against 9 mm. in typical specimens. The rust-colour of the stomach (*cf.* Orn. Monatsb. 1905, p. 76, & Vög. pal. F. p. 369) is not present in these examples.

PARUS CŒRULEUS CŒRULEUS L. [*B. 231.]

Two males and three females, February and March, S. coast, Caspian Sea.

♂. April 6, Elburz Mts. (north side, alt. 5000 ft.)

"Seen throughout the forests both on the plain and on the hills."—R. B. W.

Although in some of these specimens the yellow of the under side is rather dull, I think they must certainly be referred to the typical form and not to *P. c. persicus*, which seems confined, like *P. m. blanfordi*, to the Plateau.

ACREDULA CAUDATA TEPHRONOTA Günther. [B. 231. W. 1903, p. 529; 1907, p. 94.]

♀. Feb. 16, ⎫
♂. March 28, ⎭ S. coast, Caspian Sea.

"Not uncommon all along the south coast of the Caspian and upon the forest-clad hills on the north side of the Elburz. The remains of a new nest were seen on March 26th."—R. B. W.

These examples agree exactly with the type of the species.

ANTHOSCOPUS MACRONYX (Severz.).

♀ ♀. March 16, ⎫
♂. May 20, ⎭ S. coast, Caspian Sea.

"A few of these little Tits were seen at Ferahabad in a dense reed-bed, where they were very busy among the bottoms of the reeds. I saw them only here and once again in the reeds of the lagoon at Resht."—R. B. W.

The male is rather small in the wing, measuring 54 mm. as compared to 59 and 57 in specimens from Syr-Darya, 58 in one from Gjaz, and 56 in another from N.W. Turkestan. The females measure 52 and 53 mm. The male is rather grey on the throat, but I think that this is due to wear. It is curious that this species should occur so far west as the Caspian region, where the birds seem to be generally much like western forms.

Regulus cristatus cristatus Koch. [W. 1907, p. 94.]

♂. Feb. 24, S. coast, Caspian Sea.

"Only seen on two or three occasions along the coast of the Caspian."—R. B. W.

The Goldcrest does not appear to have been recorded previously from Persia.

Motacilla alba L. [B. 232. W. 1903, p. 528; 1907, p. 94.]

♂ ♂. March 5 & 22, S. coast, Caspian Sea.

These specimens are I think typical *M. alba* and not *M. a. dukhunensis*, but they are in full moult, and the new feathers are very little grown. They have very little white on the wings. It may be noted that the tail-feathers are moulting as well as the contour feathers.

Motacilla flava borealis Sund.

Two males, May 18, S. coast, Caspian Sea.

"Flocks of many hundreds of Wagtails and other birds were to be seen at this date on the cow-grass and marshland near the coast at Resht."—R. B. W.

The bird described by Blanford (p. 233) under *Budytes flavus*, from Ispahan, was, I expect, a specimen of this form.

Motacilla campestris Pall.

♂. May 18, S. coast, Caspian Sea (Resht).

Motacilla boarula boarula L. [W. 1903, p. 527; 1907, p. 95.]

♂. April 18, Elburz Mts. (near Tehran).

Anthus trivialis (L.). [B. 235. W. 1903, p. 528; 1907, p. 95.]

Two males, May 1, Elburz Mts. (alt. 7000 ft.).

"Tree-Pipits were not uncommon among the oak-scrub at 7000 feet and were breeding on May 1st."—R. B. W.

Anthus pratensis (L.). [B. 236.]

Three examples, March 1, 15, & 25. S. coast, Caspian Sea.

"A good many were seen in Mazandaran; they were especially numerous on the flat grassy plain around Asterabad Bay."—R. B. W.

Elsewhere in Persia the Meadow-Pipit seems very rare or absent.

Anthus campestris (L.). [B. 237. W. 1903, p. 528; 1907, p. 96.]

Three specimens, April 20, Elburz Mts. (near Tehran, alt. 8000 ft.).

Alauda arvensis cinerea Ehmcke. [B. 239. W. 1903, p. 526; 1907, p. 96.]

Four examples in March, S. coast, Caspian Sea.

♂. April 11, Elburz Mts. (alt. 8000 ft.).

"Not very numerous."—R. B. W.

Galerida cristata magna Hume. [B. 240. W. 1903, p. 525; 1907, p. 96.]

♂ ♀. April 14, Elburz Mts. (south side, alt. 5000 feet).

Otocorys alpestris penicillata (Gould). [B. 240. W. 1903, p. 527; 1907, p. 97.]

♂ ♀. April 11, Elburz Mts. (north side, alt. 8000 ft.).

Calandrella brachydactyla (Leisler). [B. 242. W. 1903, p. 525; 1907, p. 97.]

♂. April 18, Elburz Mts. (near Tehran, alt. 5000 ft.).

Melanocorypha calandra calandra (L.).

♂. March 25, S. coast, Caspian Sea.

"Not seen on the low wet country near the coast, but a few were met with on the lowest undulating slopes of the hills, where a little barley was being cultivated."—R. B.

This specimen agrees well with the typical form and is much greyer than *M. c. psammochroa* (*cf.* Ibis, 1907, p. 98). Specimens in the British Museum from Bushire and "Persia" also appear to belong to the typical form, which may visit this country on migation.

Melanocorypha bimaculata (Ménétr.). [B. 244. W. 1903, p. 526; 1907, p. 98.]

♂. April 15, Tehran.

Fringilla cœlebs L. [B. 247. W. 1907, p. 99.]

♂. Feb. 18,
♀. March 4, } S. coast, Caspian Sea.

"Chaffinches were extraordinarily numerous at Resht in February and all along the coast, but they became much scarcer towards the east and around Asterabad Bay, and in the forest near Bandar Gez there were very few. They were seen in the forest on the hills up to about 6000 feet. On our return to Resht in May scarcely a Chaffinch was to be met with."—R. B. W.

Fringilla montifringilla L. [*B. 247.]

♀. Feb. 18,
♀. March 11,
♂. March 16,
♀. March 18, } S. coast, Caspian Sea.

"Bramblings were seen in small numbers, but nowhere very numerous, in the more open places along the coast, generally in company with flocks of Chaffinches. They all seemed to have departed north by the time we returned to the coast in May."—R. B. W.

These are typical examples of the Brambling, the occurrence of which in Persia seems to have been previously uncertain. The birds are no doubt winter migrants to the Caspian region.

Ligurinus chloris (L.). [*B. 247. W. 1907, p. 99.]

♂ ♀. March 6,
♀. March 25, } S. coast, Caspian Sea.

♂. May 15, Elburz Mts. (near Resht).

"Very few Greenfinches were seen."—R. B. W.

These are rather brightly coloured, but they are not so small as *L. chloroticus,* which does not appear to occur in Persia.

CHRYSOMITRIS SPINUS (L.). [B. 247.]

♂. Feb. 13, } S. coast, Caspian Sea.
♂. Feb. 19, }

"Siskins were plentiful near Resht in February and were met with for some way along the coast, but became scarce as we went eastwards and were not seen east of Mashed-i-Ser, which was reached on March 3rd."—R. B. W.

MONTIFRINGILLA ALPICOLA (Pall.). [B. 248. W. 1903, p. 524; 1907, p. 99.]

Two males, April 20, Elburz Mts. (near Demavend, alt. 8600 ft.).

CARDUELIS CARDUELIS.

♂. April 2, S. coast, Caspian Sea.

This bird is remarkably like the specimen obtained by Mr. Woosnam in 1905 at the Diz River in South-west Persia—a bird which puzzled me greatly (*cf.* Ibis, 1907, p. 99). The measurements of the two birds are practically identical and their coloration is similar. I think that they must both be referred to typical *C. carduelis*, and it must be supposed that they were both migrants from the north.

CARDUELIS CARDUELIS MINOR Zarudny, Orn. Monatsb. xiv. p. 47.

Carduelis elegans major (nec Tacz.), Witherby, Ibis, 1903, p. 521.

♀. March 14, S. coast, Caspian Sea.

Compared with my specimens from South-west Persia, this bird is slightly darker, but it is of the same tone of colour and of the same measurements, and I think that it is undoubtedly of the same form as the plateau bird, but slightly less bleached.

LINOTA CANNABINA FRINGILLIROSTRIS Bp. & Schleg. [W. 1903, p. 521; 1907, p. 101.]

Two examples, March 25, south coast, Caspian Sea.

♂. April 8, } Elburz Mts. (north side).
♂. April 28, }

"Not at all common and seldom seen throughout the journey."—R. B. W.

CARPODACUS ERYTHRINUS (Pall.). [B. 250. W. 1907, p. 101.]

Four males, May 4 & 6, Elburz Mts. (north and south sides, alt. 6500 ft.).

"A few seen in the oak-scrub at from six to seven thousand feet, but they were uncommon and very shy and difficult to obtain, although the loud shrill whistle of the male, uttered from the top of a bush, at once attracts attention to the bird, even at a distance. They were breeding in May."—R. B. W.

RHODOPECHYS SANGUINEA (Gould). [B. 252. W. 1907, p. 102.]

♂ ♂. April 30, Elburz Mts. (near Demavend, alt. 8000 ft.).

These specimens, as well as those of the last species, are of a more greyish pink and much less brilliant than are birds later on in the summer. The rami only of the feathers are pink while the radii are grey or white, and the wearing off of the grey radii makes the pink shew up brilliantly, exactly as it does in the Linnet.

SERINUS PUSILLUS (Pall.). [B. 250.]

♂ ♂ ♂ ♀. April 8, }
♂. April 21, } Elburz Mts.
♀. April 28, }

"Very plentiful in the lower non-afforested valleys of the north side of the mountains and seen up to 8000 feet. The birds were in large flocks near Aliabad in the Herhaz valley."—R. B. W.

PYRRHULA PYRRHULA CASPICA Witherby, Bull. B. O. C. xxiii. p. 48.

♂. Feb. 21, Surdabend; ♂. Feb. 25, Alumdeh, south coast, Caspian Sea.

"Bill black; feet and iris dark brown. Only a few Bullfinches were seen. They were usually amongst the strips of box-wood near the shore."—R. B. W.

As already stated (Bull. B. O. C. xxiii. p. 48) the under parts of this Bullfinch are brighter and redder (*i. e.* less pink) than in any other form of *Pyrrhula*. The colouring of the upper side is of a purer and bluer grey than that of *P. p. pyrrhula*. In measurements they are slightly larger than *P. p. europæa* and considerably smaller than *P. p. pyrrhula* and *P. p. rossikowi*. The wing in one specimen measures 87 and in the other 84 mm.

Coccothraustes coccothraustes. [*B. 254.]

♂ ♀. Feb. 18, } south coast, Caspian Sea.
♀. Feb. 19, }

"Bill light horn-coloured; feet pale flesh-coloured; iris light greyish brown. A good many Hawfinches were seen along the coast and they were extremely plentiful at one or two places, frequenting the mulberry plantations and alder and elm forest. A few were seen in the forest on the lower foot-hills. They seemed to have entirely disappeared by May. None were met with on the south side of the mountains."—R. B. W.

I should have ventured to separate these Hawfinches as a distinct geographical form, but that Mr. Woosnam did not find them breeding, and the birds which he obtained appeared to be migrants from elsewhere.

As compared to typical birds the male is altogether paler, has no rufous tint on the upper side, and has the forehead whitish buff, while the upper tail-coverts are yellowish brown with no trace of chestnut, and the under side is paler. The females are slightly greyer and less brown on the head, with the forehead and upper tail-coverts conspicuously paler. The measurements of the wings are large, that of the male being 109 mm. and these of the females 106 and 104 mm. In coloration the birds are much like *C. c. japonicus*, but they have white wing-coverts not tipped with ashy and the measurements are larger. *C. c. humii* is easily distinguished by the yellowish-brown colour of its under side.

Passer domesticus indicus Jard. & Selby. [B. 254. W. 1903, p. 523; 1907, p. 102.]

March and April, south coast, Caspian Sea.

PASSER HISPANIOLENSIS TRANSCASPICUS Tschusi. [W. 1907, p. 102.]

Passer salicarius (Vieill.). [B. 255. W. 1903, p. 523.]

A number of specimens were obtained in March and April, on the south coast of the Caspian Sea.

"The Spanish Sparrow was first met with at Meshed-i-Ser and afterwards was frequently seen, while in the country round Bandar Gez, Barfarush, and Armol it was numerous." R. B. W.

One specimen is a cream-coloured albino with only the faintest markings on the wing-coverts.

PASSER MONTANUS (L.). [*B. 255. W. 1907, p. 102.]

March and April, south coast, Caspian Sea.

"Tree-Sparrows were extremely local. In some districts they were more numerous than any other Sparrows, and then they would not be seen for several days' march. We first saw them near Sari, while at Barfarush they were in complete possession of the town, so far as the Sparrow-world was concerned. We never saw them on the coast, but they were observed high up the mountains (7000 or 8000 feet). They had newly-hatched young at Barfarush on April 4th."—R. B. W.

PETRONIA PETRONIA INTERMEDIA Hartert. [W. 1907, p. 102.]

Petronia stulta (Scop.). [B. 255. W. 1903, p. 522.]

♀. April 11, Elburz Mts. (north side, alt. 8000 ft.).

♂. May 6, Elburz Mts. (near Tehran, alt. 6500 ft.)

EMBERIZA CITRINELLA ERYTHROGENYS Brehm.

(*Cf.* Hartert, Vög. pal. Fauna, p. 169.)

Emberiza citrinella L. [B. 257.]

♀. March 9, Meshed-i-Ser, south coast, Caspian Sea.

"Very few seen, and those only in the scrub-country near the coast, at the east end of the shore."—R. B. W.

As compared to typical West European birds, the mantle is less brown, the edgings to the feathers being greyish brown, the wing-coverts also are edged with greyish white instead of buff, and the yellow of the breast is paler. The wing measures 84 mm.

EMBERIZA MILIARIA Linn. [B. 257. W. 1903, p. 520; 1907, p. 103.]

March, south coast, Caspian Sea.

EMBERIZA CIA PAR Hartert, Vög. pal. Fauna, p. 184.

Two females, March 18, south coast, Caspian Sea.

Three males and one female, April, Elburz Mts. (north side, alt. 2000–8000 ft.).

"Common around Ferahabad in the middle of March, but not seen until then."—R. B. W.

These examples belong to the paler and larger form of the Meadow-Bunting described by Dr. Hartert.

The wings measure:—males 90, 88, 86 mm.; females 81 and 79 mm.

EMBERIZA BUCHANANI Blyth. [W. 1907, p. 103.]

Emberiza huttoni Blyth; [B. 258].

♂. May 6, Elburz Mts. (near Tehran, alt. 9000 ft.).

EMBERIZA HORTULANA L. [B. 259. W. 1903, p. 520; 1907, p. 103.]

♂ ♂. April 20, Elburz Mts. (near Demavend, alt. 8000 ft.).

♀. May 15, Elburz Mts. (near Resht, alt. 500 ft.).

EMBERIZA MELANOCEPHALA Scop. [W. 1903, p. 520; 1907, p. 104.]

Euspiza melanocephala (Scop.); [B. 260].

♂. May 6, Elburz Mts. (near Tehran, alt. 6000 ft.).

"Not uncommon around Tehran and in the lower valleys on the south side of the mountains."—R. B. W.

EMBERIZA SCHŒNICLUS TSCHUSII Reiser & Almasy.

(*Cf.* Hartert, Vög. pal. Fauna, p. 198.)

Three males and three females, March 1–11, south coast, Caspian Sea.

The upper side of this form is greyer and less buff than that of the typical race, the edgings of the feathers being greyish white instead of buff; the under side is of a purer white

"These Buntings were found in thousands all along the coast in February and March; but by May, when we returned to the coast, not one was to be seen."—R. B. W.

EMBERIZA PYRRHULOIDES PYRRHULOIDES Pall.

♀. March 16, Ferahabad, south coast, Caspian Sea.

"The only one seen."—R. B. W.

PICA PICA BACTRIANA Bp.

Four males, March 10 and 12 and April 2, south coast, Caspian Sea.

"The Magpie is one of the commonest birds of the South Caspian coast. At Resht it frequented the dense reed-beds around the lagoons a great deal. It was seen also at the villages high up in the mountain-valleys."—R. B. W.

The specimens no doubt belong to this form. They have conspicuous white rump-bands and the wing-feathers have only a very narrow band of black. Their wings are large, measuring :—205, 203, 195, and 193 mm.

CORVUS CORNIX SHARPII Oates. [W. 1903, p. 518; 1907, p. 105.]

Corvus cornix L.; [B. 262].

Two males, March 31, south coast, Caspian Sea.

"Numerous."—R. B. W.

PYRRHOCORAX GRACULUS (L.). [B. 264. *W. 1903, p. 517.]

♀. April 11, Elburz Mts. (north side, alt. 8000 ft.).

GARRULUS GLANDARIUS HYRCANUS Blanf. [B. 265.]

Three males, Feb. 21 and March 28, south coast, Caspian Sea.

"Plentiful throughout the forest-country at the foot of the hills; a few were seen in the forest on the mountains as high up as about 6000 feet, but unfortunately none were obtained."—R. B. W.

STURNUS VULGARIS CAUCASICUS Lorenz. [W. 1903, p. 519: 1907, p. 106.]

Sturnus vulgaris L.; [B. 266].

Two males, March 6 and 12, south coast, Caspian Sea.

"Plentiful at Meshed-i-Ser, but not very numerous in Mazandaran at the time of year we were there."—R. B. W.

PASTOR ROSEUS (L.). [*B. 267; W. 1907, p. 106.]

♂. May 20, south coast, Caspian Sea.

"Large flocks at the date of this specimen on the low-lying grass- and marsh-land near the coast at Resht."—R. B. W.

COLUMBA PALUMBUS L. [*B. 269. W. 1907, p. 107.]

Columba palumbus casiotis, nec Bp. [W. 1903, p. 567].

♂. March 18, south coast, Caspian Sea.

"Several large flocks of Wood-Pigeons were seen at Ferahabad and a few at other points along the coast. They were met with again in the oak forest on the hills at 4000 feet, but were not numerous"—R. B. W.

PHASIANUS PERSICUS Severtz.

One male and three females, March 6–12, Meshed-i-Ser, south coast, Caspian Sea.

PHASIANUS TALISCHENSIS Lorenz.

♂. Feb. 16, Miandeh, south coast, Caspian Sea.

"Pheasants were found all along the coast in the swampy forest and bramble-thickets and in the drier pomegranate-scrub nearer the beach. In the mountains we heard of them as high as 2000 feet, and in some places they doubtless follow the forest up very much higher. They were nowhere plentiful and were always difficult birds to get, owing to the almost impenetrable thorn- and bramble-jungle which forms the undergrowth in nearly all the forest on the plain. These thickets, however, serve very effectively in lieu of gamekeepers to preserve the birds—the Persians themselves call them 'the guardians of Mazandaran.' Without them the Pheasant would soon be a very rare bird in the district, owing to the ceaseless persecution of the local 'shikarchis.' We noticed that these Pheasants got up with much less noise than English birds, and that the cocks never uttered the least cackle when rising and were only very rarely heard to crow—and then very feebly—on going to roost. In February and March they were feeding largely on the dry seeds from the fallen pomegranates."—R. B. W.

Rallus aquaticus L. [B. 288. *W. 1903, p. 567.]

♂ ♂. Feb. 19 and 24, south coast, Caspian Sea.

"Plentiful in the swampy forest and along the numerous small streams and marshes."—R. B. W.

Larus minutus.

Four males, Feb. 26 and March 4, south coast, Caspian Sea.

"To be seen all along the sandy coast of the Caspian as well as on the larger lagoons and marshes a little way inland; they did not, however, spend the night on the inland lagoons, but were to be seen late in the evening flying out to sea in small parties."—R. B. W.

XXIII.—*On the Birds of Paraguay.*—Part III. By Charles Chubb, F.Z.S., M.B.O.U., Zoological Department, British Museum *.

Family Conopophagidæ.

77. Conopophaga anomala.

Ceraphanes anomalus Bertoni, Aves Nuev. Paraguay, p. 115.

Conophaga lineata (nec Wied), Ihering, Revista Mus. Paulista, vi. p. 331.

a. ♂ ad. Sapucay, November 16, 1902.
b. ♂ ad. „ April 13, 1904.

Bill black above, cream-coloured below; tarsi and feet yellow, greenish at base; iris brown.

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* Continued from above, p. 285.

c. ♂ ad. Sapucay, May 1, 1904.

d, e, f. ♂ ad. Sapucay, June 1–20, 1904.

g. ♂ ad. Sapucay, July 1904.

Compared with the series of *C. lineata* from Brazil, in the British Museum, the Paraguayan bird is less rufous above and more inclined to olive, the rufous of the throat and chest is much paler, and the white on the middle of the abdomen more extended. The under tail-coverts shew scarcely any trace of rufous, which is conspicuous in the Brazilian species. I agree, therefore, with Mr. Bertoni that it is a distinct form. Total length 5·3 inches; culmen 0·65; wing 2·8; tail 1·9; tarsus 1·1.

[This species is not an uncommon bird in the locality, but I have never yet met with a female specimen. I must have skinned quite a dozen at one time or another, but not a single female among them. It is true that I have generally shot them during the winter months, but even then the female must have been in the locality. A ground-feeder, it can generally be found by the rustling of the dead leaves on the ground, in this way locating itself.—*W. F.*]

78. CORYTHOPIS CALCARATA.

Myiothera calcarata Wied, Beitr. Nat. Bras. iii. p. 1101 (1831); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 615 (1908).

Corythopsis calcarata Sclater, Cat. B. Brit. Mus. xv. p. 335 (1890); Ihering, Revista Mus. Paulista, vi. p. 331 (Paraguay).

Hylocentrites ambulator Bertoni, Aves Nuev. Paraguay, p. 126.

a. ♂ ad. Sapucay, September 28, 1902.

Iris light brown.

b, c. ♂ ♀ ad. Sapucay, October 4, 27, 1902.

d. ♂ ad. Sapucay, November 30, 1902.

e, f. ♀ ad. ,, March 23, 24, 1904.

g. ♂ ad. ,, August 7, 1904.

Bill light horn-coloured above, creamy buff below; feet bluish, tinged with very light horn-colour; iris brown.

These examples agree in every respect with the series in the National Collection from Brazil. I do not consider that the bird described by Mr. Bertoni is separable from *C. calcarata* (Wied).

[Like the preceding species this has the custom of feeding on the ground, the scratching of the dead undergrowth attracting one's attention. It is not so common as *Conopophaga anomala,* but specimens can usually be met with when looked for.—*W. F.*]

Family FORMICARIIDÆ.

79. THAMNOPHILUS GUTTATUS RODRIGUEZIANUS.

Thamnophilus rodriguezianus Bertoni, Aves Nuev. Paraguay, p. 137.

Hypoedalius guttatus Ihering, Revista Mus. Paulista, vi. p. 330 (Paraguay).

a. ♀ ad. Sapucay, October 20, 1902.

Iris light brown.

b. ♂ ad. Sapucay, November 21, 1902.

c. ♂ ad. „ April 19, 1904.

d, e. ♂; *f, g, h.* ♀ ad. Sapucay, July 4–25, 1904.

i, k. ♂ ad. Sapucay, August 27, 28, 1904.

Bill black above, on ridge, gape, and lower mandible grey; tarsi and feet pale slaty blue.

l. ♂ ad. Ibitimi, February 8, 1904.

Bill black above, slate-coloured below; tarsi and feet bluish slate-coloured; iris brown.

Having compared these examples with a series of twenty-five of *T. guttatus* from Brazil, I find that the Paraguay bird has the fulvous on the lower abdomen and under tail-coverts paler and more restricted, giving the bird a whiter appearance, this is more especially marked in the male. Total length 8 inches; culmen 1·05; wing 3·4; tail 4·8; tarsus 1·2. I can only regard this form, however, as a subspecies of *T. guttatus.*

[This species is fairly common throughout the country. A lazy slow-flying bird, it can be approached quite closely before flying away, and even then its flight is only for a short distance.—*W. F.*]

80. THAMNOPHILUS CÆRULESCENS.

Batara negro y aplamado Azara. Apunt. ii. p. 199. no. ccxiii. (1905) = ♂.

Batara pardo dorado Azara, tom. cit. p. 202. no. ccxiv. = ♀.

Thamnophilus cærulescens Vieill. N. Dict. d'Hist. Nat. iii. p. 311 (1816: Paraguay) = ♂; Berlepsch, J. f. O. 1887, p. 119 (Paraguay); Sclater, Cat. B. Brit. Mus. xv. p. 200; Sharpe, Hand-list B. iii. p. 14 (1901).

Thamnophilus auratus Vieill. N. Dict. d'Hist. Nat. iii. p. 312 (1816: Paraguay) = ♀.

Thamnophilus ochrus Oberholser. Proc. Biol. Soc. Washington, xiv. p. 188 (1901: Sapucay).

a. ♂ ad. Sapucay, October 15, 1902.

b, c, d. ♂; *e, f, g.* ♀ ad. Sapucay, November 8–28, 1902.

h. ♂; *i.* ♀ ad. Sapucay, March 17–31, 1903.

Bill black above, lead-coloured below: feet bluish lead-coloured: iris brown.

k. ♂; *l.* ♀ ad. Sapucay, April 1903.

m. ♂ ad. Sapucay, February 26, 1904.

n. ♀ ad. „ March 1904.

o. ♂ ad. „ August 26, 1904.

[Another of our very common wood-birds. It can be met with in considerable numbers in all parts of the country throughout the year.—*W. F.*]

81. THAMNOPHILUS RADIATUS.

Batara listado Azara. Apunt. ii. p. 196. no. ccxii. (1805).

Thamnophilus radiatus Vieill. N. Dict. d'Hist. Nat. iii. p. 315 (1816: Paraguay); Berlepsch, J. f. O. 1887, pp. 17, 119 (Lambaré); Sclater, Cat. B. Brit. Mus. xv. p. 210; Allen, Bull. Amer. Mus. v. p. 117 (1893: Paraguay); Ihering, Revista Mus. Paulista, vi. p. 330 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, March 18, 1903.

Tarsi and feet light blue-grey; iris light buff.

c. ♂ imm. Sapucay, April 19, 1903.

Bill black above, slate-coloured below: feet light bluish slate-coloured; iris yellowish-white.

82. DYSITHAMNUS MENTALIS.

Myothera mentalis Temm. Pl. Col. ii. pl. 179. fig. 3 (1823: Brazil).

Dysithamnus mentalis Sclater, Cat. B. Brit. Mus. xv. p. 221 (1890); Allen, Bull. Amer. Mus. v. p. 118 (1893: Matto Grosso); Salvad. Boll. Mus. Torino, xv. n. 378, p. 18 (1900: Paraguay); Ihering, Revista Mus. Paulista, vi. p. 330 (Paraguay).

Thamnophilus flavescens Bertoni, Aves Nuev. Paraguay, p. 136.

a. ♂ ad. Sapucay, October 28, 1902.

b, c. ♂ ♀ imm. Sapucay, November 20, 29, 1902.

d. ♂ ad. Sapucay, April 1903.

Bill black above, dark slaty below: feet yellowish grey; iris brown.

e. ♀ imm. Sapucay, May 4, 1903.

f, g. ♂ ♀ imm. Sapucay, March 9, 31, 1904.

h, i, k. ♂; *l, m.* ♀ ad. Sapucay, April 9–30, 1904.

n, o. ♂ ♀ ad. Sapucay, May 1, 5, 1904.

Mr. Bertoni has described this species as a new form under the name of *Thamnophilus flavescens.* This large series, however, agrees with Temminck's description and plate of *D. mentalis,* and also with the series in the collection of the British Museum. I agree, therefore, with Dr. Ihering in placing *Thamnophilus flavescens* of Bertoni as a synonym of the present species.

[This species, like the last, is very abundant through the whole of Central and Southern Paraguay.—*W. F.*]

83. HERPSILOCHMUS RUFIMARGINATUS.

Myothera rufimarginatus Temm. Pl. Col. ii. pl. 132. fig. 1 (1823: Brazil); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 605 (1908).

Herpsilochmus rufimarginatus Sclater, Cat. B. Brit. Mus. xv. p. 247; Ihering, Revista Mus. Paulista, vi. p. 330 (Paraguay).

Dendrœcia erythroptera Bertoni, Aves Nuev. Paraguay, p. 138.

a. ♂ ad. Sapucay, November 21, 1902.

Iris light brown.

b, c. ♂ ♀ ad. Sapucay, March 5, 31, 1904.

d–h. ♂ ♀ ad. " April 4–22, 1904.

i. ♀ ad. Sapucay, May 8, 1904.

These specimens agree very well with Temminck's description and figure of *H. rufomarginatus,* and also with the examples of the species in the collection of the British Museum. I agree, therefore, with Dr. Ihering and Mr. C. W. Richmond that *Dendroœcia erythroptera* of Bertoni must be placed as a synonym of the present species.

[Like the preceding and about as abundant.—*W. F.*]

84. FORMICIVORA MALURA.

Myothera malura Temm. Pl. Col. ii. pl. 353. figs. 1 & 2 (1825 : Ypanema).

Formicivora malura Sclater, Cat. B. Brit. Mus. xv. p. 254; Sharpe, Hand-list B. iii. p. 26 (1901).

This specimen agrees very well with Temminck's figure, and also with another example in the National Collection from Ypanema, collected by Natterer. The species is new to the avifauna of Paraguay.

85. CHAMÆSA BREVICAUDA.

Turdus brevicaudus Vieill. N. Dict. d'Hist. xx. p. 239 (1818 : Brazil).

Chamæsa brevicauda Sclater, Cat. B. Brit. Mus. xv. p. 307.

a. ♀ ad. Sapucay, June 10, 1904.

Bill, tarsi, and feet pale pink ; iris brown.

This example is identical with others in the National Collection from Eastern Brazil, and the species is recorded here for the first time from Paraguay.

[A rare bird with us, living solitary in the large forests. In habits this species is identical with the Thrushes, and in the dim light and thick undergrowth of the woods it is not easily to be distinguished from them.—*W. F.*]

Family DENDROCOLAPTIDÆ.

86. FURNARIUS RUFUS.

Merops rufus Gm. Syst. Nat. i. p. 465 (1788: Buenos Ayres).

Hornero Azara, Apunt. ii. p. 221. no. ccxxi. (1805).

Furnarius rufus Vieill. N. Dict. d'Hist. Nat. xii. p. 116 (1817: Paraguay); Berlepsch, J. f. O. 1887, p. 119 (Paraguay); Oberh. Proc. U.S. Nat. Mus. xxv. p. 134 (Sapucay); Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

a. ♀ ad. Sapucay, June 22, 1904.

Two clutches of eggs were sent, which are glossy white and measure: axis 1·1–1·15 inch; diameter 0·8–0·85.

According to Mr. Foster this bird is resident and common in the vicinity of Asuncion, but comparatively scarce in the heavily wooded parts of the country.

87. LOCHMIAS NEMATURA.

Myiothera nematura Licht. Verz. Doubl. p. 43 (1823: San Paulo); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 614 (1908).

Lochmias nematura Berlepsch, J. f. O. 1887, p. 132 (Parana); Sclater, Cat. B. Brit. Mus. xv. p. 28 (1890); Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

Hydrolegus silvestrianus, Bertoni, Aves Nuev. Paraguay, p. 74.

a. ♀ ad. Sapucay, April 4, 1903.

Bill black above, lighter below; tarsi and feet light brown; iris brown.

b. ♀ ad. Sapucay, March 27, 1904.
c. ♂ ad. ,, June 25, 1904.

Bill blackish; tarsi and feet pale brown.

d. ♂; *e, f.* ♀ ad. Sapucay, July 10–28, 1904.
g. ♀ ad. Sapucay, September 8, 1904.

The specimens enumerated above are identical with others in the National Collection, from Brazil. I have, therefore, followed Dr. Ihering and Mr. C. W. Richmond in placing

Hydrolegus silvestrianus of Bertoni as a synonym of the present species.

[This strange bird is resident and not uncommon in this district. It can only be met with along the forest streams. Its food consists exclusively of the water insects and possibly spawn of fish and frogs. It invariably stands on the stones in the water, and at times even when the water is over the top.—*W. F.*]

88. SYNALLAXIS RUFICAPILLA.

Synallaxis ruficapilla Vieill. N. Dict. d'Hist. Nat. xxxii. p. 310 (1819: Brazil); Sclater, Cat. B. Brit. Mus. xv. p. 38; Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 593 (1908).

Synallaxis (*Barnesia*) *cururuvi* Bertoni, Aves Nuev. Paraguay, p. 76.

a, b. ♂ ad. Sapucay, June 25, 30, 1904.

Bill horn-coloured above, greyish below; tarsi and feet greenish; iris light brown.

c. ♀ ad. Sapucay, July 17, 1904.

The examples from Paraguay agree in every respect with those in the National Collection from Brazil, whence the species was described. I agree, therefore, with Dr. Ihering and Mr. C. W. Richmond in considering *S.* (*Barnesia*) *cururuvi* of Bertoni as a synonym of this species.

[I have met with this species feeding on the ground in the forests at Sapucay.—*W. F.*]

89. SYNALLAXIS FRONTALIS.

Chicli Azara, Apunt. ii. p. 266. no. ccxxxvi. (1805).

Synallaxis frontalis Pelz. Sitz. Ak. Wien, xxxiv. p. 117 (1859); id. Orn. Bras. p. 35; Berlepsch, J. f. O. 1887, p. 14 (Lambaré); Sclater, Cat. B. Brit. Mus. xv. p. 39; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 631.

a. ♀ ad. Sapucay, June 1, 1904.

Bill blackish above, grey below; tarsi and feet yellowish horn-coloured; iris very light brown.

[A very rare bird with us here, inhabiting the large montes.—*W. F.*]

90. SYNALLAXIS SPIXI.

Synallaxis spixi Sclater, P. Z. S. 1856, p. 98 (Brazil); Berlepsch, J. f. O. 1887, p. 132 (Minas and S. Brazil to Buenos Ayres); Oberholser, Proc. U.S. Nat. Mus. xxv. p. 134 (1902: Sapucay); Sclater, Cat. B. Brit. Mus. xv. p. 42; Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 631.

Synallaxis furvicaudatus Bertoni, Aves Nuev. Paraguay, p. 76.

a. ♂ ad. Sapucay, June 29, 1904.

Bill black above, greyish below; tarsi and feet bronze-green; iris light brown.

b. ♂ ad. Sapucay, August 29, 1904.

I have followed Dr. Ihering in placing *S. furvicaudatus* of Bertoni as a synonym of the present species, as the specimens from Paraguay are identical with others from Brazil.

91. SYNALLAXIS ALBESCENS.

Synallaxis albescens Temm. Pl. Col. iii. pl. 227. fig. 2 (1823: Brazil); Berlepsch, J. f. O. 1887, p. 132 (Mendoza and Buenos Ayres to Central Brazil); Sclater, Cat. B. Brit. Mus. xv. p. 43.

a. ♂ ad. Sapucay, June 19, 1904.

Bill dark horn-coloured above, pinky-grey below; tarsi and feet dry pea-green; iris light brown.

This species appears to be new to the avifauna of Paraguay, although it has been recorded from the Argentine.

92. SYNALLAXIS CINERASCENS.

Synallaxis cinerascens Temm. Pl. Col. iii. pl. 227. fig. 3 (1823: Brazil); Sclater, Cat. B. Brit. Mus. xv. p. 48.

a. ♂ ad. Sapucay, July 20, 1904.

Bill black; tarsi and feet light horn-coloured with a greenish tinge; iris reddish brown.

This example is identical with others from Ypanema and Rio Grande do Sul. The species has not been previously recorded from Paraguay.

93. SYNALLAXIS CINNAMOMEA RUSSEOLA.

Cinnamon Creeper Lath. Gen. Syn. i. part 2, p. 740 (1782: "In British Museum").

Certhia cinnamomea Gm. Syst. Nat. i. p. 480 (1788).

Anegadizo Azara, Apunt. ii. p. 262. no. ccxxxiii. (1805).

Sylvia russeola Vieill. N. Dict. d'Hist. Nat. xi. p. 217 (1817); id. Enc. Méth. ii. p. 463 (1820: Paraguay).

Synallaxis cinnamomea Berlepsch, J. f. O. 1887, p. 15 (Lambaré); Sclater, Cat. B. Brit. Mus. xv. p. 50; Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

Synallaxis cinnamomea russeola Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 630.

a. ♀ ad. Sapucay, June 7, 1904.

Bill black; tarsi and feet dark slate-coloured; iris whitish.

b. ♂ ad. Sapucay, July 30, 1904.

94. SYNALLAXIS PHRYGANOPHILA.

Horqueta tricolor Azara, Apunt. ii. p. 255. no. ccxxix. (1805).

Sylvia phryganophila Vieill. N. Dict. d'Hist. Nat. xi. p. 207 (1817: Paraguay).

Synallaxis phryganophila Berlepsch, J. f. O. 1887, p. 119 (Paraguay); Sclater, Cat. B. Brit. Mus. xv. p. 57; Oates, Cat. Birds' Eggs Brit. Mus. iii. p. 177 (1903); Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

a. ♀ ad. Sapucay, November 17, 1902.

b. ♂ juv. Sapucay, March 25, 1903.

Upper mandible black, lower mandible, tarsi, and feet pale greyish blue; iris dull white.

c, d. ♂ ♀ ad. Sapucay, June 21, 30, 1904.

e. ♂ ad. Sapucay, September 8, 1904.

Three eggs — pure white and unspotted — collected on October 17, 1903. Measurements: axis 0·8 to 0·85 inch; diameter 0·6. Incubation well advanced.

[This bird is resident, but rare. The nest is usually built in a solitary tree on the open camp and is quite a large affair, measuring some nine inches in diameter. It is constructed of thin sticks and lined with leaves, while it is easily discovered, owing to its being placed in a tree with very thin foliage. Six eggs form a full clutch.

The bird feeds on the ground; its food consists of small insects which abound in the long grasses about low swampy places.—*W. F.*]

95. ANUMBIUS ANUMBI.

Anumbi Azara, Apunt. ii. p. 226. no. ccxxii. (1805).

Furnarius anumbi Vieill. N. Dict. d'Hist. Nat. xii. p. 117 (1817: Paraguay).

Anumbius anthoides D'Orb. et Lafr., Syn. Av. 2. p. 17 (1838: Corrientes).

Anumbius acuticaudatus Burm. J. f. O. 1860, p. 250 (Parana); Sclater, Cat. Amer. B. p. 154 (1862: Parana); Berlepsch, J. f. O. 1887, p. 119 (Paraguay); Sclater, Cat. B. Brit. Mus. xv. p. 75 (part.); id. & Salvin, Nomencl. Av. Neotr. p. 64, part. (Paraguay).

Anumbius anumbi Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

Sphenopyga anumbi Cab. Mus. Hein. ii. p. 29 (1859).

a. ♂ imm. Sapucay, November 30, 1902.

b, c. ♂ ♀ ad. Sapucay, August 16, 1904.

Bill horn-coloured, pinkish grey below; feet pale greenish flesh-coloured; iris light reddish brown.

Five eggs, collected October 16, 1903, are pure white and measure: axis 1·0 inch; diameter 0·65.

These examples evidently belong to the true *Furnarius anumbi* of Vieillot, whose description was founded on the Añumbí of Azara. They differ from the majority of the more southern examples in the ashy grey upper surface, instead of rufous brown, and the dull white of the under surface, instead of deep isabelline or fulvous. There are two specimens in the collection of the British Museum obtained by Burmeister on the Parana, which belong to the pale Paraguayan form, and two from Espartillar, Argentine, collected by Mr. A. H. Holland, which must also be associated with the northern bird.

I would suggest, therefore, that the Paraguayan race bear the title of *Anumbius anumbi,* and, as there is no particular locality mentioned by Lesson in his description of *A. acuticaudatus,* that the southern form be called *A. anthoides.*

ANUMBIUS ANTHOIDES.

? *Anthus acuticaudatus* Less. Traité d'Orn. p. 424 (1831).

Anumbius anthoides D'Orb. et Lafr. Syn. Av. 2, p. 17 (1837); D'Orb. Voy. Amér. Mérid., Ois. p. 252 (1835–1844).

Synallaxis major Gould, Voy. Beagle, Zool. Birds, p. 76, pl. 22 (1841: Maldonado).

Anumbius acuticaudatus Bonap. Consp. Av. i. p. 212, part. (1850); Scl. & Salv. P. Z. S. 1868, p. 141 (Conchitas); iid. Nomencl. Av. Neotr. p. 64, part. (1873: Arg. Rep.); Sternb. J. f. O. 1869, p. 265 (Buenos Ayres); Durnford, Ibis, 1877, p. 181 (Buenos Ayres); White, P. Z. S. 1882, p. 612 (Salta and Flores); Gibson, Ibis, 1885, p. 281 (Uruguay); Sclater & Hudson, Argent. Orn. i. p. 189.

96. PHACELODOMUS RUBER.

Anumbi roxo Azara, Apunt. ii. p. 217. no. ccxx. (1805).

Furnarius ruber Vieill. N. Dict. d'Hist. Nat. xii. p. 118 (1817: Paraguay).

Phacelodomus rufipennis Sclater, P. Z. S. 1889, p. 33 (Bolivia); id. Cat. B. Brit. Mus. xv. p. 83, pl. v.

Phacelodomus striaticeps Kerr (nec D'Orb. & Lafr.), Ibis, 1892, p. 132.

Phacellodomus ruber Ménégaux & Hellm. Mém. Soc. d'Hist. Nat. d'Autun, xix. p. 84 (1906: Paraguay).

a. ♀ ad. Sapucay, November 20, 1902.

Iris brown.

This specimen is identical with the type of *P. rufipennis* from Bolivia.

97. AUTOMOLUS LEUCOPHTHALMUS BERGIANUS.

Anabates leucophthalmus Wied, Reise Bras. ii. p. 141 (1821: Brazil).

Automolus leucophthalmus Sclater, Cat. B. Brit. Mus. xv. p. 95; Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

Phacellodomus bergianus Bertoni, Aves Nuev. Paraguay, p. 78.

a. ♂ ad. Sapucay, November 23, 1902.
b. ♀ ad. ,, March 30, 1903.
c, d. ♂ ♀ ad. Sapucay, July 6, 27, 1903.

Bill horn-coloured above, greenish below; tarsi and feet yellowish bronze-green; iris white.

e. ♀ ad. Sapucay, September 1, 1904.

Having compared these examples from Paraguay with a series of eleven others from Brazil, I have come to the conclusion that the Paraguayan bird is paler above, and the chestnut tail not so intense in colour, while the under surface presents a whiter appearance. I would suggest, therefore, that it be regarded as a subspecies under the name of *Automolus leucophthalmus bergianus.*

[A rare forest bird with us here.—*W. F.*]

98. PHILYDOR RUFUS.

Dendrocopus rufus Vieill. N. Dict. d'Hist. Nat. xxvi. p. 119 (1818: Brazil).

Philydor rufus Sclater, Cat. B. Brit. Mus. xv. p. 79 (1890); Oberh. Proc. U.S. Nat. Mus. xxv. p. 133 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 625.

a. ♂ ad. Sapucay, November 28, 1902.

Bill horn-coloured above, paler below; tarsi and feet yellowish bronze-green; iris brown.

b. ♂ ad. Sapucay, February 16, 1904.
c, d. ♂ ad. Sapucay, March 10, 1904.
e, f. ♂ ♀ ad. Sapucay, June 30, 1904.
g. ♂ ad. Sapucay, July 24, 1904.

[A rare bird with us here.—*W. F.*]

99. PHILYDOR LICHTENSTEINI.

Philydor lichtensteini Cab. & Heine, Mus. Hein. ii. p. 29 (1860: Brazil); Berlepsch & Hellmayr, J. f. O. 1905, p. 31 (Paraguay).

a. ♂ ad. Sapucay, November 28, 1902.

Iris light brown.

b. ♂ ad. Sapucay, February 16, 1904.
c, d. ♂ ad. Sapucay, March 10, 11, 1904.

Bill black above, grey below; tarsi and feet bronze-green; iris brown.

e. ♂ ad. Sapucay, July 24, 1904.

[This species is resident but not common in the forests of this district; I have met with it during the months February, March, April.—*W. F.*]

100. Philydor atricapillus.

Anabates atricapillus Wied, Reise Bras. ii. p. 147 (1821: Rio Catolé, Southern Bahia).

Philydor atricapillus Sclater, Cat. B. Brit. Mus. xv. p. 96; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 625.

a, b. ♂ ad. Sapucay, April 1903–04.

c, d, e. ♂; *f.* ♀ ad. Sapucay, July 1904.

These examples are identical with others from Eastern Brazil in the collection of the British Museum. The species has not been previously recorded from Paraguay.

[Resident and not uncommon through the Central districts of Paraguay.—*W. F.*]

101. Anabazenops acritus.

Anabazenops acritus Oberh. Proc. Biol. Soc. Washington, xiv. p. 187 (1901: Sapucay).

Xenicopsis acritus Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

a, b, c. ♀; *d.* ♂ ad. Sapucay, March 1903–04.

e, f. ♂ ad. Sapucay, April 21, 1904.

g. ♂ ad. Sapucay, May 4, 1904.

h. ♂ ad. „ June 18, 1904.

[This species is resident and not uncommon through the central parts of the country.—*W. F.*]

102. Xenops rutilus.

Xenops rutilus Licht. Verz. Doubl. p. 17 (1823: Bahia); Sclater, Cat. B. Brit. Mus. xv. p. 111; Ihering, Revista Mus. Paulista, vi. p. 328 (Paraguay).

Xenops argobronchus Bertoni, Aves Nuev. Paraguay, p. 75.

a. ♂ ad. Sapucay, March 18, 1904.

Bill black above, cream-coloured below; tarsi and feet dark slate-coloured; iris brown.

b, *c*. ♂ ♀ ad. Sapucay, July 3, 20, 1904.

These specimens agree in every respect with others, in the British Museum series, from various parts of South America. I have, therefore, followed Dr. Ihering in placing *X. argobronchus* Bertoni as a synonym of the present species.

[This peculiar little bird is rare with us. All these S. American Creepers are so much alike in their habits that little can be said about any one in particular.—*W. F.*]

103. Sclerurus scansor.

Oxypyga scansor Ménétr. Mém. Ac. Sci. St. Pétersb. (6) i. p. 520, tab. xi. (1835: Rio de Janeiro).

Sclerurus umbretta (nec Lichtenstein) Berlepsch, J. f. O. 1887, p. 132; Ihering, Revista Mus. Paulista, vi. p. 329 (Paraguay).

Geoœcia orryctera Bertoni, Aves Nuev. Paraguay, p. 79; *cf.* Richmond, Proc. U.S. Nat. Mus. xxxv. p. 611 (1908).

Sclerurus caudacutus scansor Hellm. Nov. Zool. xiv. p. 58 (1907).

a. ♀ ad. Sapucay, March 9, 1904.

b, *c*. ♂ ad. Sapucay, July 3, 27, 1904.

I agree with Dr. Ihering and C. W. Richmond in uniting *Geoœcia orryctera* of Bertoni with the present species, as the specimens recorded above are identical in every respect with others in the National Collection from E. Brazil.

[One of our very rare forest birds. Its habits are very similar to those of the Thrushes. It lives entirely upon the ground in the deepest and gloomiest parts of the forest. It is not by any means shy, and if not startled will feed close up to the observer.—*W. F.*]

104. Sittasomus erithacus.

Dendrocolaptes erithacus Licht. Abh. Akad. Berl. 1820, p. 259, pl. i. fig. 2; id. Verz. Doubl. p. 17 (1823: San Paulo); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 585 (1908).

Sittasomus erithacus Berlepsch, J. f. O. 1887, p. 132; Sclater, Cat. B. Brit. Mus. xv. p. 119; Ihering, Revista Mus. Paulista, vi. p. 329 (Paraguay).

Acanthurus microrhynchus Bertoni, Aves Nuev. Paraguay, p. 79.

a, b. ♀; *c.* ♂ ad. Sapucay, March 7, 27, 1904.

Bill black above, dark slate-coloured below; tarsi and feet dark slate-coloured; iris brown.

d, e. ♂ ♀ ad. Sapucay, April 4, 19, 1904.

These five examples agree perfectly well with *S. erithacus* of Lichtenstein, and I see no reason for upholding *Acanthurus microrhynchus* of Bertoni as a separate species.

[A rather common bird with us; it can be met with in all the large forests, although not common in the smaller woods.—*W. F.*]

105. XIPHOCOLAPTES ALBICOLLIS PARANENSIS.

Dendrocopus albicollis Vieill. N. Dict. d'Hist. Nat. xxvi. p. 117 (1818: Brazil).

Xiphocolaptes albicollis Berlepsch, J. f. O. 1887, p. 132 (Paraguay); Sclater, Cat. B. Brit. Mus. xv. p. 142; Ihering, Revista Mus. Paulista, vi. p. 329 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 631.

Xiphocolaptes paranensis Bertoni, Aves Nuev. Paraguay, p. 68.

a. ♀ ad. Sapucay, August 31, 1904.

Bill black; tarsi and feet olive-green; iris reddish brown.

This individual specimen is somewhat darker in colour above and below than those in the National Collection, and the rufous of the wings and tail is also deeper in colour. It may, therefore, be regarded as a subspecies under the name of *X. albicollis paranensis*.

[A very rare bird with us here.—*W. F.*]

106. XIPHOCOLAPTES MAJOR.

Trepadore grande Azara, Apunt. ii. p. 277. no. ccxli. (1805).

Dendrocopus major Vieill. N. Dict. d'Hist. Nat. xxvi. p. 118 (1818: Paraguay).

Xiphocolaptes major Berlepsch, J. f. O. 1887, pp. 15, 119 (Lambaré); Sclater, Cat. B. Brit. Mus. xv. p. 145 (1890); Kerr, Ibis, 1892, p. 133 (Rio Pilcomayo); Ihering, Revista Mus. Paulista, vi. p. 329 (Paraguay).

a. ♂ ad. Sapucay, November 14, 1902.
b. ♂ ad. „ May 5, 1903.
c. ♀ ad. „ January 16, 1904.
d. ♂ ad. „ July 2, 1904.

Bill grey, blackish at point; tarsi and feet greenish; iris brown.

e. ♀ ad. Sapucay, August 17, 1904.

A clutch of three eggs, pure white, measure: axis 1·4 inch; diameter 1·05.

[This species is fairly common through the central parts of the country where there is heavy timber.—*W. F.*]

107. Picolaptes fuscus apothetus.

Dendrocolaptes fuscus Vieill. N. Dict. d'Hist. Nat xxv. p. 117 (1818: Brazil).

Picolaptes tenuirostris Sclater, Cat. B. Brit. Mus. xv. p. 151.

Picolaptes tenuirostris apothetus Oberholser, Proc. Biol. Soc. Washington, xiv. p. 188 (1901: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 329 (Paraguay).

Picolaptes koeniswaldianus Bertoni, Aves Nuev. Paraguay, p. 73.

Picolaptes fuscus Ménégaux & Hellm., Mém. Soc. d'Hist. Nat. d'Autun, xix. p. 113 (1906).

a. ♂ ad. Sapucay, April 21, 1903.

Bill black above, pinkish white below; tarsi and feet bluish slate-coloured; iris brown.

b–e. ♂; *f.* ♀ ad. Sapucay, July 3–8, 1903.

These examples are slightly smaller than specimens from Brazil, as will be seen by the following dimensions: average measurements of Paraguayan birds: wing 2·9–3·0 inches, tail 2·3–2·65, culmen 1·05–1·1; Brazilian birds: wing 3·15–3·5 inches, tail 2·55–2·95, culmen 1·05–1·2.

I agree with Mr. Oberholser in making this form a subspecies of *P. fuscus* (Vieill.). *P. koeniswaldianus* Bertoni can only be regarded as a synonym of the present species, as suggested by Dr. Ihering.

108. PICOLAPTES ANGUSTIROSTRIS.

Trepadore comun Azara, Apunt. ii. p. 279. no. ccxlii. (1805).

Dendrocopus angustirostris Vieill. N. Dict. d'Hist. Nat. xxvi. p. 116 (1817 : Paraguay).

Picolaptes angustirostris Berlepsch, J. f. O. 1887, pp. 15, 119 (Lambaré); Sclater, Cat. B. Brit. Mus. xv. p. 155.

a. ♀ ad. Sapucay, March 10, 1904.

Bill pinky horn-coloured; tarsi and feet slate-coloured; iris brown.

b. ♂ ad. Sapucay, June 11, 1904.

Bill creamy grey; tarsi and feet greenish slate-coloured.

c. ♀ ad. Sapucay, August 26, 1904.

109. DENDROCOLAPTES PICUMNUS.

Dendrocolaptes picumnus Licht. Abh. Akad. Berl. 1820, p. 202 (Brazil): Sclater, Cat. B. Brit. Mus. xv. p. 170; Ihering, Revista Mus. Paulista, vi. p. 329.

Dendrocolaptes tarefero Bertoni, Aves Nuev. Paraguay, p. 69.

a, b. ♂ ad. Sapucay, April 2, 21, 1903.

c. ♂ ad. Sapucay, March 8, 1904.

d, e. ♂; *f.* ♀ ad. Sapucay, April 7, 19, 30, 1904.

Bill black; tarsi and feet old-bronze coloured; iris brown.

g, h. ♂ ad. Sapucay, May 2, 8, 1904.

These examples belong to the Brazilian form with the deep chestnut-coloured wings and tail. I can only regard *D. tarefero* of Bertoni as quite inseparable from this species.

[To be continued.]

XXIV.—*Proceedings at the Annual General Meeting of the British Ornithologists' Union*, 1910.

The Annual General Meeting of the British Ornithologists' Union for 1910 was held at the house of the Zoological Society of London, 3 Hanover Square (by permission), on May 25th. The Chair was taken by the President, Dr. F. DuCane Godman, F.R.S.

The Minutes of the last Annual General Meeting were read and confirmed.

The Report of the Committee, which was then read, announced the continued prosperity of the Union during the past year. The Annual Volume of 'The Ibis' for 1909 (the fifty-first of the whole and the third of the Ninth Series) had been edited by Dr. P. L. Sclater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A. It contained 744 pages and was illustrated with 8 coloured plates, 2 maps, and 11 text-figures.

The Jubilee Supplement Volume had also been published early in the year. It contains 268 pages and is illustrated with 43 photographic plates and one facsimile plate.

With much regret the Committee reported the deaths of the following Members since the last Annual Meeting :—

A. Y. Lethbridge, F. D. W. Newcome, Dr. R. Bowdler Sharpe, Thomas Southwell, Dr. E. P. Wright, and Dr. H. H. Giglioli.

The following gentlemen had resigned :—Hon. Ian M. Campbell, Col. W. H. M. Duthie, E. W. H. Holdsworth, R. S. Keep, H. H. J. Nicholls, Robert Service, and Colin West ; and the names of Major Charles Donovan and K. C. Macdonald had been removed from the List of Members under Rule 6.

At the date of the Meeting the Union consisted of 424 Ordinary Members, 3 Extra-Ordinary, 9 Honorary, 9 Colonial, and 20 Foreign Members.

The Statement of Accounts for the year ending December 31st, 1909, was then submitted and approved, and a vote of thanks was accorded to Mr. H. E. Dresser, the Auditor.

The Meeting then proceeded to elect the Officers for the ensuing year, and it was announced that Dr. F. DuCane Godman, F.R.S., had been re-elected President, and Mr. J. Lewis Bonhote, M.A., F.L.S., Secretary; also that Mr. Edward Bidwell had been elected a Member of the Committee in the place of Mr. Ernest Gibson, who had retired by rotation.

The following thirteen gentlemen were then balloted for and elected Ordinary Members of the Union:—Lt.-Col. Hubert F. Barclay, Dursley, St. Albans; Harry Beeston, Sunnymead, South Street, Havant; The Lord Brabourne, 19 Curzon Street, W.; Charles Chubb, British Museum (Nat. Hist.), Cromwell Road, S.W.; Charles P. Conigrave, F.R.G.S., W. Australian Museum, Perth, W. Australia; Cecil Boden Kloss, F.Z.S., F.R.A.I., Curator of the Perak State Museum, Taiping, Federated Malay States; T. Hastings Lees, M.A., 4 Osnaburgh Terrace, Regent's Park, N.W.; Herbert W. Murray, The Old House, Epsom; Sir Arthur W. Rücker, M.A., D.Sc., LL.D., F.R.S., 75 Victoria Street, S.W.; Harold Russell, F.Z.S., 16 Beaufort Gardens, S.W.; Edward F Stanford, Cumberland House, Kensington Court, W.; Herbert Stevens, North Lakhimpur P.O., Upper Assam, India; Dr. Robert A. Logan van Someren, Uganda Medical Staff, Kyetumi, Uganda.

The following four ladies were elected Honorary Lady Members:—H.G. The Duchess of Bedford, F.Z.S., Woburn Abbey, Woburn, Beds.; Miss Dorothea M. A. Bate, Wyseby, Ecclefechan, N.B.; Mrs. Margaretta Louisa Lemon, F.Z.S., Hillcrest, Redhill, Surrey; Miss Emma Louisa Turner, F.Z.S., Upper Birchetts, Langton Green, Tunbridge Wells.

Mr. James H. Fleming, of Toronto, was elected a Colonial Member of the Union.

Dr. Sclater then moved the following resolution, which was seconded by Mr. W. R. Ogilvie-Grant and unanimously agreed to:—

> "That the Members of the British Ornithologists' Union have received with great grief the news of the death of their fellow-Member, Mr. Boyd Alexander,

> and wish to record their sense of the severe loss which the science of Ornithology has thus experienced.
>
> "That the Secretary be requested to express to Col. B. F. Alexander, and other relatives of Mr. Boyd Alexander, full sympathy with them in the sad loss they have suffered."

A vote of thanks to the Zoological Society of London for the use of their rooms was unanimously passed and the Meeting adjourned.

After the Meeting the joint Dinner of the British Ornithologists' Union and the British Ornithologists' Club was held at Pagani's Restaurant, Great Portland Street, and attended by 47 Members and Guests.

XXV.—*Biographical Notice of the late* Professor GIGLIOLI.

By JOSEPH I. S. WHITAKER, M.B.O.U.

THE close of the year 1909 will be sorrowfully remembered by Ornithologists, and in particular by our Brethren of the British Ornithologists' Union, for the sad loss of two of its most prominent and distinguished members.

With the death of Prof. Henry Hillyer Giglioli on the 16th December, and that of Dr. Richard Bowdler Sharpe on the 25th December, 1909, two brilliant careers in the Ornithological World have been brought abruptly to an end, and two life-long records of industrious and indefatigable work in the cause of science have suddenly been arrested.

The results of such work, self-imposed and self-denying toil, but undoubtedly a labour of love in both cases, have fortunately been specially rich and full of the highest interest and intrinsic value to our beloved branch of science, and the good deeds that have been accomplished by the two eminent men who have so recently been taken from our midst, while yet in the full vigour of manhood, will live for ever, though the authors are no more.

The knowledge, nay, the mere thought, of this will assuredly be of comfort to the bereaved relatives and personal friends whom our late members have left behind them, while the unanimous expression of sympathy and esteem evinced by their numerous acquaintances and admirers in the world of science will also tend, in some measure, to mitigate the grief which must be felt at their loss.

To the rising generation of workers in the field of Ornithology the precious heirloom which has been left us by Giglioli and Sharpe in their numerous published writings will be an inestimable boon, and should serve as an encouragement and incentive to further and redoubled efforts on their part, in striving to follow the footsteps of the two great men who have gone before them.

In referring to the loss of *both* of our late members, and coupling their names together, as I have done, I am perhaps going beyond my province, but the sad coincidence of their having been taken from us within so short a time of each other, added to the friendship and esteem that I have personally entertained for both, must be my excuse for so doing, if I have erred in this respect.

Meanwhile I gratefully beg to express my recognition of the compliment paid me by the Editors of 'The Ibis' in the request that I should write a biographical notice of Professor Giglioli, a charge which I have the more willingly accepted, as affording me an opportunity of rendering a slight tribute to the memory of my late dear friend.

Professor Henry Hillyer Giglioli was born in London on June 13th, 1845. His father, Dr. Giuseppe Giglioli of Brescello-Emilia, one of the plucky little band of Italian political exiles who sought and found a temporary home in our country, on leaving Italy, first settled in Edinburgh, and later on went to London, where he married an English lady, Miss Hillyer. I may here observe that Giglioli, although a staunch and patriotic Italian, was always proud of his English descent, while England, as well as Italy, has had reason to be proud of *him*.

In 1848 the Giglioli family returned to Italy, and here

Henry received his early instructions at Genoa and Pavia. In the year 1861, on his father being appointed to a professorship at Pisa, under the new Italian Rule, young Giglioli, then sixteen years of age, was sent by the Italian Government to study in London, and selected the School of Mines for that purpose, as having the most able lecturers of the day. During the three years he spent in London he made good use of his time, acquiring the solid grounding which formed the basis of the profound scientific knowledge which was to serve him so well in after years. Attending most of the important scientific meetings and lectures in London, notably those given by Huxley, whose work on Comparative Anatomy he afterwards translated into Italian, Giglioli lost no opportunity of improving his mind, and, at the same time, of cultivating the acquaintance of the best Naturalists and other eminent men of the day, such as Darwin, Owen, Wallace, Lyell, Tyndall and Hooker. Among his more intimate friends, besides Huxley, may be mentioned the two Lankesters, Forbes, Sclater, Sharpe, Günther, Seebohm, Swinhoe and Yule.

I have before me, at the present moment, an interesting little document, kindly placed at my disposal by Madame Giglioli, which shows the keen interest in Natural Science evinced by Giglioli and some of his friends even at a very early age. The document, which bears the emblem of a triangle, with the three words *Truth, Love, Perseverance* inscribed within it, followed by the names of fifteen great Naturalists and men of Science, enumerates the "Articles of Faith" binding upon those belonging to a brotherhood formed for the advancement of Natural Science. It is undated, but must have been drawn up between 1861 and 1864, and is signed by Edwin Ray Lankester and Henry Giglioli.

It may at once be stated that Giglioli was not only a good Ornithologist, but also a first-class all-round Zoologist, besides being distinguished in other branches of Science, but of this more anon.

From London Giglioli proceeded to Pisa in order to complete his studies, and in 1864 took his degree at the

University of that town. The following year he had the great grief of losing his father, to whom he was much attached.

In 1865 Giglioli was appointed assistant Naturalist, under Prof. De Filippi, to the expedition, fitted out chiefly for the purpose of scientific research, which was being despatched by the Italian Government in the war-ship 'Magenta.' De Filippi unfortunately dying of cholera during the voyage, Giglioli was left in sole command of the expedition at the early age of 22, but, with his usual energy and resourcefulness, succeeded in carrying out his work most satisfactorily, and returned in three years' time, after having circumnavigated the globe. A full account of this expedition was published by Giglioli in 1876, in a volume of 1040 pages, illustrated by numerous plates and maps. Various other papers treating of the scientific results obtained during this voyage were published by him at different times, among others one in 'The Ibis,' under the title of "Some new and little-known Birds collected during a Voyage round the World."

In the year 1869 Giglioli was appointed Instructor in Zoology and Comparative Anatomy of Vertebrates at the Royal Institute of the Higher Studies in Florence, a post which he occupied uninterruptedly—it is needless to say with what measure of dignity, honour and success—for forty years, or until the day of his death. In 1874 he was named Ordinary Professor of Zoology and Comparative Anatomy of Vertebrates at the Royal Institute, and assumed the direction of the Florence Zoological Museum. In 1871 Giglioli married Signorina Casella, a lady of distinguished Lombard family, and exceptionally gifted, whose loving devotion and solicitous interest, one may almost say co-operation, in her husband's work, were at times of great service to him. Three children were born of this union, two sons and a daughter. The elder of the sons, Odoardo, has a Government post as Inspector of the Art Galleries in Florence; the second, Guido, has qualified at our English Royal College of Physicians, in addition to taking his Italian degree, and is practising as a physician in Florence. The daughter is married and resides in Genoa.

Shortly after his appointment to his important post at the Florence Institute, Giglioli settled down to steady zoological work, chiefly, as was natural, cabinet work, although he also found time to make occasional zoological expeditions, for which his early training as a field-naturalist eminently qualified him. Among the more important of these expeditions may be mentioned those to the Italian islands and to the shores of the Tyrrhenian and Adriatic Seas, as well as one in Hungary and two in Corsica.

In 1876 Giglioli laid the foundation of the fine collection of Italian vertebrate animals, now the pride of the Florence Zoological Museum. It had been his original intention to confine this collection to birds alone, but he was eventually induced to extend it to the entire vertebrate fauna. The need of such a collection in Florence had hitherto been sadly felt, and to its formation Giglioli devoted himself heart and soul, personally superintending the preparation and mounting of the specimens, and sparing no effort to make it as perfect as possible. The collection is, in fact, undoubtedly the most complete of its kind in Italy, and probably of any National collection elsewhere. It contains in all 34,200 specimens of Italian Vertebrates, representing 1232 species, the Ornithological section comprising 4296 specimens, representing 488 species. These are all beautifully mounted and set up, some by Prof. Magnelli and others by Sigr. Vincenzo Squilloni, both able taxidermists at the Florence Museum. Magnelli's zeal and co-operation were of the greatest service to Giglioli in the early stage of the formation of the collection. During the course of the past year it has very rightly been decided that this collection should bear its founder's name, and in future be known as the Giglioli Collection. The official announcement of this resolution was to have been made on the occasion of the Jubilee to have been held in December last, but the information was privately communicated to Giglioli shortly before his death, and gave him much pleasure.

The official announcement has since been made at a commemoration of the late Prof. Giglioli, held at the Florence Museum on February 2nd of this year.

Between 1881 and 1883 Giglioli was appointed by the Italian Government to undertake three separate deep-sea explorations in the Mediterranean, and carried out the work most efficiently on board the R.S. 'Washington.' The scientific results obtained during these explorations were published in due course, and the fact of the existence of an abysmal Mediterranean Fauna was made known for the first time, some important discoveries being recorded in the way of new genera and species of fishes, brought to the surface from a depth of 3632 metres. The existence of a deep-sea fauna in the Mediterranean had previously been doubted, and even denied by some competent authorities, in consequence of the negative results obtained from the dredging that had been carried out by English and French expeditions.

In 1884 Giglioli attended the first International Ornithological Congress, held at Vienna, as the representative of Italy, a capacity in which he was present at all subsequent meetings of the kind held in Europe, viz. at Budapest in 1891, at Paris in 1900, and in London in 1905. He also represented Italy at the International Conference held in Paris in 1895 for the Protection of Birds. In addition to these, as delegate of the Italian Government, he attended various other international and local congresses, Geographical and Ethnological as well as Zoological; in fact there were few scientific meetings of any importance at which Giglioli was not present. Quite recently he was called to Rome, to give his opinion with regard to the new Game Laws that the Government proposes passing in Italy.

In 1885, after the Vienna Ornithological Congress, at which meeting it had been decided that each State should institute an ornithological enquiry throughout its dominion, Giglioli was charged to carry out that for Italy, the results being published four years later in an important work of over 700 pages, entitled "Report on the results of the Ornithological Enquiry in Italy: Part I.—Avifauna Italica." This was followed, in 1890, by another volume of equal proportions styled "Part II.—Local Avifaunas," and the year after (1891) by a third volume "Part III.—Notes of a General Character." A previous work on the Italian Ornis had been published by Giglioli in 1886; and so recently as 1907 another important work on the subject was produced by him, under the same title of "Avifauna Italica." These five volumes on the Birds of Italy are among the more important of his ornithological publications, and contain much valuable information. Besides these Giglioli wrote the letterpress of the illustrated work brought out by Signor Alberto Manzella under the title of "Iconografia dell' Avifauna Italica," a work issued in parts and not yet completed.

Among his other Zoological publications may be mentioned a Manual, in two volumes, on the Zoology of Vertebrates, and an important work, published in conjunction with Prof. A. Issel, under the title of "Pelagos," which treats of pelagic life and submarine exploration.

Giglioli was also a contributor to various zoological journals and periodicals, both in Italy and elsewhere, our own journal 'The Ibis' being among the number, as were also 'Nature' and 'The Proceedings of the Zoological Society of London.' His first contribution to 'The Ibis' dates so far back as 1863.

Shortly after the completion of his work in connexion with the Ornithological Investigation, Giglioli was charged with the exploration of the coral-reefs and sponge-banks around the coasts of Sicily and the small island of Lampedusa, an undertaking which he discharged with his usual keenness and activity, obtaining as a result information of considerable value to science as well as to commerce.

The last ten years of his life were much taken up with work arising from his numerous Government appointments, and particularly those in connexion with the Italian Fisheries. As President of the Royal Consultative Commission for Fisheries, and as President of various local committees appointed for the study and regulation of the fisheries of the Italian lakes, and the settlement of questions arising out of the right of other

States to participate in such fisheries, Giglioli's time was fully occupied. Indeed it is surprising how, with so much outside work in addition to his every-day Museum duties—for these he never neglected—he yet found time to write so much as he did. During the last two years he was also occupied on a work which would probably have proved of the greatest value, being a descriptive Catalogue of the Vertebrates of the Florence Museum. Unfortunately it is far from being completed.

In the early part of this notice I have alluded to Giglioli as being not only a good Ornithologist, but also a first-class all-round Zoologist. I may now add that although Ornithology was his favourite branch of Zoology, he was quite competent in other branches as well, and as an Ichthyologist he was undoubtedly one of the best authorities in Europe.

A strict binomialist and non-splitter, he entertained very decided views on the subject of nomenclature, and did not hesitate to express them should occasion require it. He was, however, willing to accept trinomialism in the case of well-defined subspecies or geographical races, provided that this was applied solely to such subspecies or races, and not to what he called the mother-species as well. This is, more or less, in accordance with the ideas expressed by me in my work on Tunisian Birds.

As an Anthropologist and Ethnologist Giglioli bore a high reputation, and in addition to being Vice-President of the Italian Anthropological Society, he was an Honorary Fellow of our own Royal Anthropological Institute, as well as of other similar Societies on the Continent. His literary contributions to the Italian 'Archivio d'Antropologia e l'Etnologia' were many and varied, while he also wrote occasionally for the London periodical 'Man' and the Leiden 'Intern. Archiv für Ethnographie."

An interesting work was published by Giglioli in 1901 entitled "Material for the Study of the Stone Age from Prehistoric down to Modern Times." He devoted himself more especially to the study of prehistoric and aboriginal races, as well as of little-known and uncivilized modern tribes. In the course of this study he succeeded in forming a most valuable and interesting private collection of prehistoric implements and weapons of primitive and savage warfare. This collection is most carefully and admirably arranged, and, whatever may be its ultimate destination, it is sincerely to be hoped that it will be preserved intact and not broken up. Giglioli was also a Geographer of no mean merit, and represented his country at all the International Geographical Congresses that have been held of late years. He was a constant contributor to the Bulletin of the Italian Geographical Society, of which he was an Honorary Member. Among his other publications may be mentioned his translation into English of Beccari's "Wanderings in the Great Forests of Borneo," a volume of 450 pages, which was very favourably reviewed by 'The Athenæum,' and, what pleased Giglioli greatly, was pronounced to have been written "with great mastery of the English language."

Giglioli was indeed a man of wonderful versatility and general qualifications, and, at the same time, most thorough and painstaking in all he undertook to do. His capacity for work was prodigious, as shown by the long list of his published writings, the collections he formed, the many zoological explorations carried out by him, and the numberless scientific meetings he attended, and all this over and above his ordinary Professorial and other work. In no way exhausted by his day's labours at the Museum, it was his habit to work far into the night at home.

Notwithstanding his many and varied occupations, however, Giglioli always found time to give a helping hand to any of his pupils, or to young struggling students who might be in want of his assistance, and was invariably kind and sympathetic with them, as well as considerate in the way he helped them. For this reason he was naturally very popular and much beloved by them, as indeed he was by all those who knew him well, and had the opportunity of appreciating his many sterling qualities. Few men perhaps have ever had such a gift of making and of retaining friends as Giglioli had. His geniality formed an irresistible attraction, while the wonderful freshness of youth, which he retained to the last, coupled with his bright intelligence and cheery voice and manner, captivated and held one a willing prisoner. For those who knew him intimately, moreover, he had the additional great charm of loyalty and sincerity, and was a true friend on whom they knew they could rely. His personality was considerable, and was repeatedly called into evidence, both at home and abroad, during his long tenure of office.

Although by reason of his qualifications in many ways eminently fitted for a public life, Giglioli cannot be said to have courted notoriety, but, on the contrary, being naturally of a happy and contented disposition and wrapped up in his work, which was at the same time his pleasure, he seems rather to have avoided it, and to have sought retirement so far as was compatible with the position he occupied. He was indeed probably only too thankful when an opportunity presented itself for a little quiet work in his comfortable study at the Natural History Museum, surrounded by his pet collections. Here I used frequently to pay him a visit, and after a friendly, and to me always an interesting and instructive chat, we used often to leave the Museum together and walk into the town, as far as the Vieusseux Library, to which Giglioli was wont to resort at the close of the day's work, in order to read the newspapers, the only relaxation he allowed himself.

During my annual visits to Florence he was always particularly kind in placing his library at my disposal, lending me any books I might wish to consult, and generally rendering me any service in his power.

I was looking forward to meeting him again last autumn, but was unfortunately prevented from leaving England as early as usual, and towards the end of November I received a letter from him—his last to me—in which, after deploring the reason of my delayed arrival in Florence, he expressed the hope that we should meet there before the 20th of December. This was the date fixed for the celebration of the fortieth anniversary of Giglioli's call to the Cathedra of Zoology and

Comparative Anatomy of Vertebrates in Florence, and preparations had been made for a solemn and imposing ceremony in his honour. It was intended to be a public manifestation of the high esteem and affection in which he was held by his many friends and pupils, and an Album was to have been presented to him on that occasion containing the signatures, accompanied in many cases by the photographs, of his well-wishers. The importance of the ceremony was to have been still further enhanced by the King of Italy choosing this occasion to confer upon Giglioli the high distinction of "Grande Ufficiale della Corona d'Italia," as a token of his esteem, and in further recognition of Giglioli's important services to the State for so many years. The decree conferring this distinction was actually signed by the King on the very day of Giglioli's death, as it had been intended to reach him before the date fixed for the Jubilee. The irony of Fate decreed it otherwise, however, and the bright festival, so joyfully looked forward to, was suddenly changed into sorrow and mourning.

Among the honorary distinctions conferred upon Giglioli, other than the above-named, may be mentioned those of Commander of the Italian Order of St. Maurice and St. Lazarus, Commander of the Crown of Italy, Commander of the Order of Francis Joseph of Austria, and of that of the "Mérite Agricole" of France, Officer of the Order of the Rose of Brazil, and of Public Instruction in France.

Besides being an active or Honorary Member of numerous scientific Societies and Committees in his own country, Giglioli was an Honorary Member, or Fellow, of various Societies and Institutes in other European States, as well as in North and South America and in New Zealand. In addition to being an Honorary Member of our British Ornithologists' Union, he belonged to our Zoological Society of London, our Royal Geographical Society, and to the Royal Anthropological Institute.

Although most of Giglioli's old friends in England are, alas, now no more, there are still a few left who will retain a lively and pleasing recollection of him and regret his loss.

In Italy, needless to say, apart from his family Giglioli has left many who will mourn him deeply, and find it difficult, not to say impossible, to fill the void which his death has created in their lives. By them, and particularly by his pupils, so devoted to their "caro Professore," the period of friendship and connexion with him, long or short as it may have been, will be treasured as a bright landmark in their lives, and one on which they can always look back with pleasure.

To his sadly stricken family, while offering my deepest sympathy in their bitter affliction, I can only express the hope that Time, the great healer, will gradually assuage their grief, and eventually restore to their midst the peace of mind so suddenly snatched from them. When this may happily have come about, and their thoughts are able to revert calmly to the past, it will be with a sense of well-justified pride and satisfaction that they will review the great results of the life which was so nobly spent in the cause of Science, and realize that truly such a life has not been lost.

XXVI.—*Notices of recent Ornithological Publications.*

[Continued from p. 373.]

50. *Beaufort on Birds from Dutch New Guinea.*

[Birds from Dutch New Guinea. By Dr. L. F. de Beaufort. Résultats de l'Expédition scientifique Néerlandaise à la Nouvelle-Guinée en 1903 sous les auspices de Arthur Wichmann. Vol. V. Zoologie, Livr. iii. Leyden, Brill, 1909, pp. 389-420.]

The collection of birds described in this memoir was made by the author and Mr. H. A. Lorenz during the Dutch New Guinea Expedition of 1903, under the leadership of Prof. Arthur Wichmann. The greater part of it was formed at Humboldt Bay on the north coast, where the expedition remained four months, but some of the birds were obtained at various localities in the Bay of Geelvink and other places.

At Humboldt Bay, the headquarters of the expedition were on an elevated sand-bank, where Casuarinas and Rhizophores were growing. Here *Artami* and *Rhipidura tricolor* were constant visitors to the trees, while some species of *Ptilotis* were also very common. On the sandy sea-shore the voice of *Corvus orru* was often heard, and *Tringoides hypoleucus* was abundant.

After some preliminary remarks, in which the diversity of ornithologists' views and practice as regards sub-species are deservedly commented upon, the author gives a list of the 149 species of which examples were obtained. One "sub-species"—*Lorius cyanauchen viridicrissalis*—is described as new, while two others are doubtful. Most of the specimens belonged to well-known Papuan species, but *Munia spectabilis*, a Finch, previously only obtained in New Britain, was met with near Lake Sentani on the north coast. The exact localities of all the specimens are stated. Examples of nine species of Birds-of-Paradise were secured. At Humboldt Bay, *Paradisea minor finschi* was very common, but males in full dress could only be obtained inland, those on the coast having been all shot off!

51. *Beebe on the Hoatzin.*

[Ecology of the Hoatzin. By C. William Beebe. Zoologica, vol. i. No. 2. New York, Dec. 1909.]

The New York Zoological Society has started a new periodical, called 'Zoologica,' of which four parts relating to birds are now before us. All are by the same gifted author, whose name is well-known to us, and are based on the results of his own recent work.

The Hoatzin is one of the most anomalous members of the Class of Birds, and additional information concerning it, especially as regards its habits and mode of life, are very welcome. We have also in Mr. Beebe's article a complete *résumé* of all that was previously known of this strange fowl.

Mr. Beebe met with the Hoatzin on the River Guarapiche, in South-eastern Venezuela, in March 1908, and on the Aburi River in British Guiana in April 1909, and had good opportunities of observing its curious habits, which he describes at full length, and illustrates by a series of photographic figures. He concludes his article with a useful list of authorities, amongst which will be found the names of Huxley, Parker, and Garrod. The exact distribution of this reptilian Bird (as it has been appropriately termed), so far as it is known, is clearly shown in a map (p. 49).

52. *Beebe's Ornithological Reconnaissance in Venezuela.*

[An Ornithological Reconnaissance of North-eastern Venezuela. By C. William Beebe. Zoologica, vol. i. No. 3. New York, 1909.]

In February 1908 Mr. and Mrs. Beebe left New York for Trinidad, and proceeded thence across the Gulf of Paria to the opposite coast of Venezuela. Here they disembarked at Guanco, the shipping port for the products of the great pitch-lake of La Brea. Mr. Beebe describes the large mangrove-forest which borders the Venezuelan coast and the peculiar characters of its flora and fauna, and gives us a corresponding account of the upland forest and the country round the pitch-lake. After twenty days of diligent collecting in these two districts, Mr. and Mrs. Beebe returned to New York with their spoils.

The classified list of the birds observed on this occasion contains for the most part the names of well-known species, and on many of them interesting field-notes are given. The great Tinamou (*Tinamus tao*) was detected breeding and its shining blue eggs were obtained. The nest of an Amazon Parrot was discovered. The remarkable calls of *Nyctibius jamaicensis* and *Tapera* (scr. *Diplopterus*) *nævia* were noted. The tunnel-nest formed by a Jacamar (*Galbula ruficauda*) was explored and its eggs taken. The curious companionship of the colonies of the Yellow-backed Cassique (*Cacicus persicus*) with venomous wasps is described at full length. Similar instances of the "communal guardianship" are well known, but the subject is one of intense interest.

During their short stay of twenty days in the mangrove-swamps and coastal forest 138 species of birds were identified, and of these 22 were found breeding. This was not bad work in a tropical country.

53. *Beebe on the Tail-feathers of the Motmots.*

[Racket-formation in the Tail-feathers of the Motmots. By C. William Beebe. Zoologica, vol. i. No. 5. New York, 1910.]

Mr. Beebe discusses the curious question as to how and why the tail-feathers in the Motmots become spatulate. That the bird—at least in some cases—assists in the process is certain, for it has been "caught in the act" by such trustworthy observers as Waterton, Salvin, and Bartlett. Moreover, Mr. Beebe has a living bird that performs the operation every year. But the *object* of this habit is still quite unknown. Mr. Beebe is of opinion that a certain definite portion of the central rectrices of the Motmot "has a decided degeneration," so that when the bird preens its feathers the barbs and barbules of this portion come easily away. This may be true, but *why* does the "degeneration" take place? As Mr. Beebe confesses, we cannot tell. But his experiments on the tail-feathers of his Motmot are well worthy of study.

54. *Beebe on Supernumerary Toes in Birds.*

[Three Cases of a Supernumerary Toe in the Broad-winged Hawk, *Buteo brachypterus.* By C. William Beebe. Zoologica, vol. i. No. 6.]

Mr. Beebe describes, and illustrates by photographic plates, three instances of an extra toe being present in specimens of *Buteo brachypterus.* It is certainly remarkable that this abnormality should occur in three individuals obtained in widely different localities.

55. *Clark on the Birds of the North Pacific.*

[The Birds collected and observed during the Cruise of the U.S. Fisheries Steamer 'Albatross' in the North Pacific Ocean and in the Bering, Okhotsk, Japan, and Eastern Seas from April to December 1906. By Austin Hobart Clark. From the 'Proceedings' of the U.S. National Museum, vol. xxxviii. pp. 25–74 (1910).]

In 1906 Mr. Clark accompanied, as ornithologist, the cruise of the U.S. Fisheries Steamer 'Albatross' in the North Pacific. The route out was made by the Aleutian

Islands, Kamchatka, and the Kurile Islands to Japan, and the return voyage by Honolulu. Mr. Clark has already described the novelties of bird-life met with during the voyage (see Pr. U.S. Nat. Mus. xxxii. p. 467, and 'Ibis,' 1907, p. 641), and the present paper gives an account of the expedition and its results.

Mr. Clark's list contains the names of about 190 species, amongst which are those of many rare marine birds from the North Pacific coasts, especially Alcidæ, while some interesting observations were made on their habits. But no list is given of the specimens actually obtained, and in many instances the species are only noted as seen. Such is the case with the great Sea-Eagle *Haliaëtus pelagicus*, which is believed to have been seen near Unalaska, and the Great Black Woodpecker (*Picus martius*), a single specimen of which was observed near Korsakoff, Sakhalin.

The question of the American subspecies of *Lagopus lagopus* is discussed at some length.

56. *Chapman's Camps and Cruises of an Ornithologist.*

[Camps and Cruises of an Ornithologist. By Frank M. Chapman. With 250 photographs from Nature by the Author. 1 Vol. 8vo. 432 pp. New York.]

Mr. Chapman is, in our opinion, a very fortunate man. To have gone on so many "cruises" and to have made so many "camps" does not fall to the lot of all his ornithological brethren, and we are quite sure that, although there may have been some little mishaps in his various expeditions, he is well pleased with their general results, of which he now gives us a most interesting account.

As many of our readers may be aware, Mr. Chapman is the Curator of Ornithology in the "American Museum of Natural History" in New York. For the last seven years he has devoted his time, during the nesting-season, to the collecting of specimens and to making field-studies and photographs of certain birds on which a series of what is called "Habitat-groups" for the Museum may be based. In a previous notice of one of Mr. Chapman's papers (see 'Ibis,' 1909, p. 540) we have fully explained the nature and plan of these "Habitat-groups," which have been most favourably reported upon by all those who have been fortunate enough to see them. We have now before us a volume which contains what may, we suppose, be called the "evidence" upon which the "Habitat-groups" have been formed. Mr. Chapman, who is by no means inclined to hide his light under a bushel, has already published some of his pieces of "evidence" in 'The Century,' Scribner's 'Country Life,' and other serials, but now presents us with a connected account of his adventures in search of "bird-life," which cannot fail to interest all bird-lovers, and specially those of his own country. Mr. Chapman divides his subjects according to the localities visited. After an introduction, in which he treats of the umbrella required to conceal the photographer from the ever-wary bird, he gives us chapters on the "Bird-life" of the Atlantic coasts and islands, the Bahamas, California, and Western Canada, and of his adventures met with in visiting these widely different scenes. It is difficult to pick out the most interesting birds which he has studied, but the Flamingos of the Bahamas, the Water-Turkeys of Florida, and the Skimmers of Cobb's Island are perhaps of special interest. We will ask our ornithological friends to read the volume for themselves, and we are sure that they will be pleased with it, even if they know little of American bird-life. It is very fully illustrated by 250 photographs, "taken from Nature by the author," which do him great credit.

57. *Cory on the Birds of Illinois and Wisconsin.*

[The Birds of Illinois and Wisconsin. By Charles B. Cory. Chicago, U.S.A., 1909. 8vo. 764 pp.]

Settled at Chicago, as Head of the Department of Zoology in the great Field Museum of Natural History, Mr. Cory has turned his attention to the birds of Illinois and Wisconsin, which have already been the subject of his study in the 'Birds of Eastern North America.'

The first portion of the present book (274 pages) contains a series of "keys" to the genera and species, which are practically the same as those which first appeared in the above-mentioned work. They are intended to enable the enquirer to identify any bird without much trouble, and seem to be well devised for that purpose, though the system suggested is somewhat novel. The second part contains descriptions of the 398 species of birds which are known to occur in the two States of Illinois and Wisconsin. It also gives an account of their nests and eggs, so far as they are known, and of their geographical distribution, together with more or less brief biographical notes.

The arrangement employed is that of the American 'Check-list,' though we observe that several "improvements" on it are introduced. For instance, "*Dumetella*" (p. 265) is substituted for "*Galeoscoptes*"; but we are not informed who is the authority for this emendation, or the reason for it. Again, we regret to see that our old friend "*Trochilus*" of Linnæus is to be superseded by *Archilochus*! This, we are told, is the *dictum* of the Committee of the A. O. U. on nomenclature, but the reason for the change is (perhaps prudently) omitted.

A great number of text-figures, mostly excellent, illustrate Mr. Cory's work, and, together with the "keys," will render it useful to the student. At the same time, we fear that the great weight of the volume (caused by the heavy paper on which it is printed) may somewhat interfere with its sale.

58. *Hartert on the Birds of Hainan.*

[The Birds of Hainan. By Ernst Hartert, Ph.D. Novitates Zoologicæ, xvii. p. 180 (1910).]

After a short disquisition on previous work on the birds of Hainan, which was commenced by Swinhoe in 1868, and continued by Whitehead, who lost his life in its dangerous climate, Dr. Hartert proceeds to give us a complete account of the series of specimens formed by a Japanese collector, "Katsumata," who was sent to the island by Owston, of

Yokohama, at the request of Mr. Walter Rothschild. The "plums" of Katsumata's collection, seven in number, were described by Mr. Rothschild in 1893, and fourteen more new forms are differentiated in the present article, the completion of which has been delayed by more pressing engagements.

Including those that have been mentioned by previous authorities, Dr. Hartert registers 281 species and sub-species as appertaining to the Avifauna of Hainan. Mr. Ogilvie-Grant (P. Z. S. 1900, p. 457) made the number of species 239, but, like a wise man, he did not count sub-species.

The species and subspecies of Hainan named for the first time in the present article are:—*Turtur chinensis hainanus, Glaucidium cuculoides persimile, Ceryle rudis insignis, Rhopodytes tristis hainanus, Iyngipicus scintilliceps swinhoei, Gecinus chlorigaster longipennis, Graucalus macei larvivorus, Turdinulus roberti hainanus, Proparus brunneus argutus, P. nipalensis rufescentior, Turdus citrinus aurimacula, Phylloscopus godsoni, Acridotheres cristatellus brevipennis*, and *Dendrocitta sinensis insulæ*. Besides these, Dr. Hartert describes a new *Accipiter virgatus confusus* from the Philippines, and *Pycnonotus sinensis formosæ* from Formosa. The most remarkable birds of Hainan are perhaps the three Gallinæ, *Arboricola ardens* (see Styan, 'Ibis,' 1893, pl. xii.), of which Katsumata first procured adult specimens of both sexes, the splendid *Polyplectron katsumatæ* (which Dr. Hartert wishes to degrade into a subspecies!), and the beautiful Silver Pheasant of the island (*Gennæus whiteheadi*), besides such fine birds as *Nycticorax magnifica* and *Cissa katsumatæ*. But the mountains of Hainan do not rise high enough to attract the Palæarctic forms which are found on the higher elevations of the Philippines and Formosa.

59. *Hellmayr on the Manikins.*

[Genera Avium, conducted by P. Wytsman. Part IX. Passeres, Fam. Pipridæ, by C. E. Hellmayr. 31 pp., 3 col. plates. Price 13*s*. Brussels, 1910.]

After a long quiescence we are much pleased to receive some more parts of this work, which may be said to be well planned but rather slowly executed. Part 9[*], recently received, is devoted to the Pipridæ, a well-known Neotropical family of Dentirostral Oligomyodan Passeres, generally of small size and of very brilliant colouring in the male sex. The author, who is well acquainted with his subject and the latest literature on it, recognises 20 genera as appertaining to the Pipridæ, and gives us excellent "keys" to the species of each genus. The largest is typical *Pipra* with 29 species and sub-species. The rarest species is *Sapayoa ænigma*, based on a single specimen in the Tring Museum.

Three well-drawn coloured plates illustrate this excellent memoir.

60. *Macoun's Canadian Birds.*

[Catalogue of Canadian Birds. By John Macoun and James M. Macoun. 1 Vol. 8vo. 761+xviii pp. Ottawa, 1909.]

This is a reprint, with corrections and additions, of Mr. J. Macoun's 'Catalogue of Canadian Birds,' which was published in three parts in 1900–4[†]. In addition to the Dominion of Canada, the authors have included in the present edition notices of the birds of Newfoundland, Greenland, and Alaska, as Nature is not limited by political divisions. The classification and nomenclature adopted are nearly those of the American 'Check-list.' The species included in the list are 768. The greater part of the new material of the present edition has been written by Mr. J. M. Macoun. In the case of the first edition of this useful work, we are told that the stock was exhausted almost immediately after publication. In consequence of the rapid augmentation of the population of Canada now going on, we cannot doubt that the same will be the case with the present edition.

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[*] See 'Ibis,' 1907, p. 566, for notice of Parts 6, 7, 8.

[†] See 'Ibis,' 1905, p. 281.

61. *North on the Large-tailed Grass-Wren.*

[On the Nest and Eggs of the Large-tailed Grass-Wren (*Amytis macrurus* Gould). By Alfred J. North, C.M.B.O.U. Vict. Nat. February 1910.]

Mr. North describes and figures the nest and eggs of *Amytis macrurus* from specimens obtained near Kalgoorlie, Western Australia, and adds interesting particulars about its habits as observed by his correspondent Mr. Gibson.

62. *Ogilvie-Grant on the Birds of the Ruwenzori Expedition.*

[Ruwenzori Expedition Reports. 16. Aves. By W. R. Ogilvie-Grant, F.Z.S., M.B.O.U. Trans. Zool. Soc. xix. Part 4.]

In our last number (see above, p. 372) we noticed Mr. Woosnam's interesting itinerary of the Ruwenzori Expedition and his proposed division of that mountain-mass into six zones, distinguished by their principal features of vegetation and their leading forms of bird-life. We have now before us Mr. Ogilvie-Grant's complete account of the birds collected during the Expedition; it is contained in the fourth part of the nineteenth volume of the Zoological Society's quarto 'Transactions,' and is illustrated by ten coloured plates.

Mr. Ogilvie-Grant commences his introduction by remarking that of the collections made by the Expedition probably none is so nearly complete as that of the birds. This is mainly due to the fact that four of its members were specially interested in Ornithology, and made great efforts to obtain examples of every species that was met with. These exertions resulted in the acquisition of specimens of 385 species, of which, so far as our present knowledge extends, 20 are found only on Ruwenzori and on the Mufumbiro Volcanoes, and 96 more in the Ruwenzori district at lower levels and on the great central chain of the adjoining lakes. On the whole, 27 new species were discovered by the Ruwenzori Expedition.

Another noticeable feature in the Ruwenzorian Ornis is the presence of 91 West-African species. It is evident that these have extended their range through the wood-region of the great Congo Valley, and so have become mixed with the Eastern forms.

Mr. Ogilvie-Grant deals with these 385 species in systematic order, giving the necessary references, a list of the specimens and their exact localities, and the field-notes of the collectors, distinguished by their initials. Critical remarks on the nomenclature and on the allied species are added when required. We are pleased to see that our author has not found it necessary to use trinomials in any case in this long list of names.

The extraordinary noise made by the Broad-billed Flycatchers of the genus *Smithornis*, first described by Mr. Bates as heard in Cameroon, was also noted by Mr. Woosnam, who calls it "the most remarkable note of a bird that he had ever heard" (*op. cit.* p. 401). It is a "kind of jar, something like the sound made by the Greater Spotted Woodpecker when hammering on a dead branch." Mr. Woosnam mentions it as occurring in the case of three different species of the genus—*Smithornis camerunensis*, *S. rufolateralis*, and *S. sharpei*.

Only one new species appears to be first described in this memoir. This is *Cinnyris kempi* (*op. cit.* p. 329). The others were all shortly characterised in different numbers of the Bull. B. O. C.

The following 28 birds are beautifully figured in the plates which accompany this memoir :—

Malimbus fagani, *Spermospiza poliogenys*, *Pyromelana crassirostris*, *Neisna nyansæ*, *Nesocharis ansorgii*, *Cryptospiza salvadorii*, *Pytelia belli*, *Nectarinia dartmouthi*, *Cryptolopha alpina*, *Pholidornis denti*, *Anthoscopus roccatii*, *Sylviella denti*, *Anthus leggei*, *Erythrocercus congicus*, *Apalis affinis*, *Apalis denti*, *Apalis ruwenzorii*, *Alethe woosnami*, *Alethe carruthersi*, *Bradypterus alfredi*, *Cossypha archeri*, *Bradypterus barakæ*, *Phyllanthus czarnikowi*, *Bleda woosnami*, *Trochocercus bedfordi*, *Batis diops*, *Chloropeta gracilirostris*, and *Tarsiger ruwenzorii*. Plate xix. is devoted to the eggs of 24 species. The plates have been drawn by Grönvold and chromo-lithographed by Green.

The "pick" of the new species of Ruwenzori is, we should say, the large Sun-bird *Nectarinia dartmouthi*, named after the Earl of Dartmouth, who was a most liberal supporter of the Expedition. This beautiful creature is found only on Ruwenzori, where it frequents the Lobelia- and Groundsel-Zone from an elevation of 12,500 up to 14,500 feet. In the early morning, when the sun shines, this tract seems alive with the birds, which appear to feed entirely upon the Lobelia blossoms. It seems to be rather remarkable that no truly arctic form of bird-life was met with on Ruwenzori.

Mr. Ogilvie-Grant not only invented the idea of the Ruwenzori Expedition, but procured the necessary means among his friends to execute it and selected the best persons to carry it out. He has now further increased the gratitude due to him from naturalists by this excellent memoir on its results as regards the Class of Birds.

63. *Pycraft on the Anatomy of* Bradypterus.

[On some Points in the Anatomy of *Bradypterus cinnamomeus.* By W. P. Pycraft, F.Z.S., M.B.O.U. Trans. Zool. Soc. xix. Part 4, p. 454 (1910).

We are always glad to receive a contribution (however small) from Mr. Pycraft's large stock of knowledge of the structure of birds, but are rather at a loss to understand why he should have been set to work on this *Bradypterus*, which offers few, if any, very striking peculiarities, and of which there is only one specimen available.

The pterylosis of this bird is figured and some of the muscles of the wing and leg are described, but "without material for comparison," we are told, it is not possible to say anything definite as to the exact position of *Bradypterus*. It is, however, we suppose, a true Passerine form with feeble powers of flight, as shown by its short wing and the shallow keel of the sternum.

64. *Robinson on rare Birds in the Malay Peninsula.*

[Notes on Birds new to, or rare in, the Malay Peninsula. By Herbert C. Robinson. Journ. Fed. Mal. States Mus. vol. iv. p. 129.]

Since the publication of Mr. Robinson's Hand-list of the Birds of the Malay Peninsula south of the Isthmus of Kra (see 'Ibis,' 1908, p. 379) specimens have come to hand concerning which he thinks some details may be of interest. These relate to *Columba punicea*, *C. grisea*, *Porzana auricularis*, *Gallinago megala*, *Dissura episcopus*, *Herodias alba*, *Ardeola bacchus*, *Ardetta pulchra*, *Botaurus stellaris*, *Asarcornis leucoptera*, *Circus melanoleucus*, *Spizaëtus nepalensis*, and *Baza jerdoni*.

65. *Rothschild and Hartert on Eagle-Owls.*

[Notes on Eagle-Owls. By the Hon. Walter Rothschild and Ernst Hartert. Nov. Zool. xxvi. p. 110.]

The authors have been studying the Eagle-Owls allied to *Bubo ignavus*, and give us the results of their investigations. They recognise seven subspecies of this form, of which *Bubo bubo hispanus* (from Spain), *B. b. interpositus* (from Cilicia), and *B. b. aharonii* (from Palestine) are now described as new. They are not acquainted with *B. b. nikolskii* of Zarudny, from West Persia, said to be allied to *B. b. turcomanus*, but smaller. *Bubo ascalaphus* is reduced to a subspecies of *B. ignavus*.

66. *Salvadori on Parrots.*

[Genera Avium, conducted by P. Wytsman. Part XI. Psittaci, Fam. Loriidæ, by T. Salvadori. 20 pp., 6 col. plates. Price £1 7*s*. 2*d*. Brussels, 1910. — Part XII. Psittaci, Fam. Cyclopsittacidæ, by T. Salvadori. 6 pp., 2 col. plates. Price 6*s*. Brussels, 1910.]

We are glad to find the veteran author of these two memoirs at work again on one of his favourite subjects. These articles relate to the brush-tongued Loriidæ—a very well-marked family of the Psittacine order, and to the Cyclopsittacidæ—a small but peculiar group established in the

Catalogue of Birds in 1891, the distinctive characters of which are not so strongly marked.

The Lories, as will be at once evident on inspection of the six coloured plates that illustrate Count Salvadori's memoir, are one of the most brilliant groups of birds, and clad in scarlet and blue of various shades. As in the 'Catalogue,' the author divides them into 14 genera, and gives "keys" to the species of every genus, so that they can, in most cases, be easily determined by their most salient characters. About 90 species are recognised, spread over the whole Australian Region except New Zealand, but most abundant in New Guinea and Australia. One species (*Psitteuteles johnstoniæ*), strangely enough, has passed out of Australian limits and taken up its abode in the mountains of the Philippine Islands *.

The Cyclopsittacidæ, which form the subject of the twelfth part of the 'Genera Avium,' are characterised by the absence of the transverse ridges on the under surface of the upper mandible. They contain two genera only—*Neopsittacus* and *Cyclopsittacus,* both confined to the Austro-Malayan Subregion. The former genus contains 4 species and the latter 19. Some of them are well figured in the two accompanying plates.

We think that Mr. Wytsman would do well to "hurry up" his assistant ornithologists, who have only supplied him with twelve parts in five years!

67. *Sclater on the Jacamars.*

[Genera Avium, conducted by P. Wytsman. Part X. Picariæ, Fam. Galbulidæ, by P. L. Sclater. 7 pp., 1 col. plate. Price 3*s.* 8*d.* Brussels, 1909.]

The Neotropical Family of Jacamars, as explained in the introductory remarks to this memoir, has occupied Sclater's attention for many years. In 1882 he published a monograph of them and of the allied family of Puffbirds (Bucconidæ), illustrated by coloured plates drawn by Keulemans. In 1891 he prepared the article dealing with the Jacamars published in the nineteenth volume of the 'Catalogue of Birds in the British Museum.' The present memoir follows strictly the arrangement and nomenclature of the last-named work with a few necessary corrections and additions.

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* *Cf.* Goodfellow, Avicult. Mag. iv. p. 83, pl.

Sclater divides the Jacamars into two subfamilies—the *Galbulinæ* and the *Jacameropinæ*. The typical Jacamars are arranged in five genera, while of the subfamily *Jacameropinæ* only one genus containing a single species is known.

The memoir is illustrated by a coloured plate, in which figures of both sexes of *Galbula pastazæ* are given and various details about other species.

68. *Sclater on the Birds of Jamaica.*

[Revised List of the Birds of Jamaica. By P. L. Sclater, D.Sc., F.R.S. Handbook of Jamaica, 1910, p. 596. Kingston, Jamaica, 1910.]

In 1881 the brothers Alfred and Edward Newton prepared a List of the Birds of Jamaica as then known to them, and published it in the 'Handbook of Jamaica' for that year. The Handbook for 1881 and the List have been long out of print, and Sclater, who visited Jamaica last year, was requested to prepare a new List for publication in the Handbook of the present year. This he consented to do, and the result is now before us.

The 'Revised List' follows the order and arrangement of the former List very closely, only necessary alterations having been made. But two small additions are that the "habitat" and range of every species is stated, and that a few remarks on the general character of the Jamaican avifauna are appended.

According to the 'Revised List,' the ornis of Jamaica contains 194 species, of which 99 are constant residents, 52 are winter visitors, and 13 are occasional visitors. The number of species of birds actually restricted to Jamaica is 42, and 9 of these species belong to genera not met with elsewhere.

69. *Scott on a new* Ibycter.

[An apparently new Carrion-Hawk of the Genus *Ibycter*. By W. E. D. Scott. Auk, xxvii. p. 152.]

Mr. Scott describes, as *Ibycter circumcinctus*, an apparently new Carrion-Hawk. The type specimen, now in the Princeton University Museum, was obtained in the territory of Chubut, Patagonia, in February 1896.

70. *Scott and Sharpe on Patagonian Birds.*

[Reports of the Princeton University Expeditions to Patagonia, 1896–1899, J. B. Hatcher in charge. Edited by William B. Scott. Vol. II. Ornithology. Part II. Procellariidæ—Charadriidæ. By William Earle Dodge Scott associated with R. Bowdler Sharpe. Princeton, N.J. 4to. Pp. 113–344.]

In 1895 (see 'Ibis,' 1895, p. 130) we gave a notice of the issue of the first part of Mr. W. E. D. Scott's work on the 'Birds of Patagonia' and an account of its origin and proposed scope. The further progress of this work has been retarded—mainly, we believe, by Mr. Scott's uncertain health; but the second portion is now before us, and the conclusion, we are told, will not be long delayed.

The present instalment contains an account of the Patagonian Petrels and other families (according to Sharpe's arrangement) up to the Charadriidæ. It will be observed that in many cases we are told that the Princeton Expeditions did "not procure" specimens of the species referred to, but that the descriptions and figures have been based upon the series in the Natural History Museum, South Kensington, where the author worked for some months and received valuable assistance from the late Dr. Sharpe.

71. *Sharpe on the Ornithological Literature of* 1908.

[Zoological Record, Vol. xlv. (1908). Aves, by R. Bowdler Sharpe, LL.D. London: Harrison & Sons. 8vo. 148 pp. Price 6*s.*]

This is the section relating to Birds of the 45th volume of the 'Zoological Record,' and at the same time, according to the new arrangement, forms part of the 'Seventh Annual Issue of the International Catalogue of Scientific Literature.' It has been compiled, like the preceding records of the Class "Aves," by the late Dr. Bowdler Sharpe, and was one of the last pieces of work that our laborious friend lived to complete.

The "Aves" of the 'Zoological Record' is well-known to ornithologists, and is, in fact, an absolute necessity to all naturalists engaged in work on birds. They cannot do without it, and the facility of obtaining it in a separate form for the small price of 6*s.* has been a great boon to them.

The general arrangement of the 'Record' for 1908 is the same as that of the previous year*, but the "Titles"—that is, the names of the books and papers examined—are, as usual, more numerous (1949 for 1908 against 1716 for 1907), so that the labour of compilation increases every year.

We are happy to say, however, that an ornithologist has been found who is willing to take up this heavy task. Mr. W. L. Sclater, now settled in London, is engaged in preparing the report on "Aves" for the 'Zoological Record' of 1909.

72. *Ticehurst on Kentish Birds.*

[A History of the Birds of Kent. By Norman F. Ticehurst. With 24 plates and a map. London, 1909. Witherby & Son. Pp. i-lvi, 1–557.]

We have now received a copy of Dr. Ticehurst's long-expected work on the Birds of Kent, a county specially interesting to ornithologists for historical as well as other reasons. Not only is it the nearest point to the Continent and in the direct course of the migration of many species, but it is well known to receive constant visits from others which stray from their normal routes, while in several cases the first British specimens on record have been obtained within its limits. The Dartford Warbler, the Cream-coloured Courser, the Kentish Plover, and the Sandwich Tern are cases in point, and for these the author has given us reproductions of the original plates of Pennant, Latham, Lewin, and Boys respectively.

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* See 'Ibis,' 1909, p. 257.

Kent is so bountifully supplied by Nature with woods and marshes suitable for breeding-sites that a rich avifauna is the natural result, while its chalk cliffs and the vast expanse of shingle at Dungeness are a still further attraction to birds. The Bearded Tit, Raven, Chough, and Kite no longer nest within its boundaries, but the Blue-headed and Grey-headed Wagtails have been proved to do so, and the rarer Ducks, such as the Garganey, are perhaps increasing in numbers. The book itself, however, must be consulted for the long series of birds of all descriptions which the careful investigation of Dr. Ticehurst and his helpers have enabled them to include within its pages, and we strongly recommend all our readers to consult for themselves this accurate and well-written account of a most interesting county.

Not the least important feature of the work is an excellent Introduction, dealing with the physical features of the district, the bird-collections to be found there, and the migratory movements of the various species. The last-named subject is, moreover, repeatedly under discussion throughout the volume, and is evidently one of the chief objects with which it has been written.

The illustrations are good and well suited to the letterpress, while two maps of the county are given—one topographical and the other geological.

The classification used is based on that of Howard Saunders, but where Dr. Hartert has distinguished a British from a continental form, his views have been adopted.

XXVII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors of 'The Ibis'":—

Sirs,—I think the following observations may interest your readers.

On Saturday, April 19th, at 3 P.M., I noticed an extraordinarily large flight of birds coming towards my camp from the other side of the Red Sea. Their course was N.N.E.; my camp being situated on the shore of the Sea in lat. 29° 5′ N., long. 30° 4′ 15″ E.

On the closer approach of the birds I found that they were Storks in a rather exhausted condition, in flocks of 500 or 600 birds each. They were flying at a height of about 70–75 feet above the sea. Immediately on its arrival each company soared up high in the air in a kind of spiral column, presumably to spy out the land, and finding no water (the nearest well was some fourteen miles distant) continued their course in a N.E. direction across the desert. This went on until 5.30 P.M.

I instructed some members of my staff to try to make a rough estimate of the numbers in the flocks, and on comparing notes we found that each detachment seemed to consist of about 550 birds, and that no fewer than 17 detachments had arrived, and, after performing their spiral evolution, had continued their journey to the north-east.

Can you give me any explanation as to where this enormous army of birds (about 30,000) came from and whither they were going?

Yours &c.,

Robert H. Mackenzie
(*Mining Engineer*).

Jebel Tanka,
by Abu Zenima,
Eastern Desert, Sinai.

[The birds were, no doubt, White Storks (*Ciconia alba*) on their return journey northward to breed in Europe and Asia, but their congregation in such enormous numbers is, we believe, a fact that has not been previously recorded.—Edd.]

Sirs,—In his paper on a collection of Birds made in Northern Somaliland, Mr. D. A. Bannerman makes the remark (p. 297) that the female of *Passer castanopterus* does not appear to have been previously described. Mr. Bannerman seems not to have consulted a paper of mine ('Ibis,' 1905, p. 509) on a most interesting collection made by Captain A. E. Hamerton in the same country, in which a description of the female of this species was given (p. 518).

Yours &c.,
H. F. Witherby.

326 High Holborn,
London, W.C.
May 11th, 1910.

Sirs,—In the 'Ibis' of April 1910, vol. iv. p. 359, it is stated of two Yellow-browed Warblers (*Phylloscopus superciliosus*) from East Ross-shire that they are "the first known to have occurred on the Scottish mainland." May I point out that these birds were recorded in the 'Annals of Scottish Natural History,' 1910, p. 55, as "the first record for the autumn of the occurrence of this interesting migrant on the mainland of Scotland," and that the first actual record of the Yellow-browed Warbler on the mainland of Scotland, as also its first occurrence in spring in the British Isles, were recorded in the 'Annals of Scottish Natural History,' 1909, p. 183. The date of this interesting occurrence was April 11th, 1909, near Lockerbie, Dumfriesshire.

Yours &c.,
Hugh S. Gladstone.

Capenoch, Thornhill,
Dumfriesshire.
May 30th, 1910.

Sirs,—On the 28th of April last an example of the Senegalese Sand-Grouse (*Pterocles senegalus*) was obtained at Santa Croce Camarina in the province of Syracuse, and was forwarded to me in the flesh.

The specimen in question, an adult female, when shot, was in company with another individual of the same species, presumably its mate, on some rough uncultivated land, and a very high wind from the east was blowing at the same time.

For this interesting addition to my Collection and for the particulars concerning its capture I am indebted to the kindness of the Marquese Arezzo and his son the Duca di Celano, large land-owners in the above-mentioned district.

I believe this to be the first recorded instance of the occurrence of this bird not only in Italy, but in Europe.

I am, Sirs, yours &c.,
JOSEPH I. S. WHITAKER.

Villa Malfitano,
Palermo, Sicily.
June 2nd, 1910.

[We believe that Mr. Whitaker is quite correct in stating that the Senegalese Sand-Grouse has not been previously recorded in Europe. It is, however, well known in Algeria and Tunis, see Whitaker's 'Birds of Tunisia,' vol. ii. p. 240.—EDD.]

Death of Lieutenant Boyd Alexander.—Most of our friends will already be acquainted with the sad news of the death of Lieutenant Boyd Alexander, who was killed on April the 2nd in a skirmish with the natives at Nyeri, some 60 or 70 miles to the north-east of Abeshr, the capital of Wadai, while endeavouring to force his way from Lake Chad into the Anglo-Egyptian Sudan. We hope to be able to give some account of the life and work of this great Explorer and Naturalist in our next number.

A rare Jay in Berlin.—It appears from a notice in 'The Field' (vol. cxv. p. 779) that a living example of the rare Jay, *Garrulus lidthi*, of the Loochoo Islands, has been lately received by the Zoological Garden of Berlin. This Jay was first described by Bonaparte in 1850, and was beautifully figured by Wolf in the Zoological Society's 'Proceedings' (1850, p. 80, pl. xvii.) from a single specimen in the collection of Prof. van Lidth de Jeude, of Utrecht.

The bird was stated to be from Japan, but was sought for in vain by all subsequent collectors until 1904, when, as announced in this journal*, it was rediscovered in one of the islands of the Loochoo group by the collectors of Mr. Alan Owston, of Yokohama.

New Birds at the Zoological Society's Gardens.—In the Report of the Council read at the Anniversary Meeting of the Zoological Society on April 29th, it was stated that living examples of the following twelve species new to the Collection had been received during the year 1909:—*Pomatorhinus erythrogenys* (from India), *Crypsorhina varians* (from Java), *Hæmatopus palliatus* (from Jamaica), *Ostinops viridis* (from Venezuela), *Manucodia atra* (from the Aru Islands), *Melanerpes superciliaris* (from Cuba), *Trachyphonus cafer* (from South Africa), *Eos cyanogenis, Trichoglossus nigrigularis,* and *Aprosmictus cyanopterus* (from New Guinea), *Agapornis nigrigenis* (from Rhodesia), and *Speotyto hypogæa* (from Venezuela).

New "British Birds."—In 'British Birds' for April last three additions to our avifauna are announced—*Locustella lanceolata*, *Totanus stagnatilis*, and *Lanius senator badius*. *Totanus stagnatilis* is a well-known species on the Continent, but no certainly authenticated British specimen existed in any collection. *Lanius senator badius* is a mere sub-species of the Woodchat (*Lanius pomeranus*), which, until lately, was believed to be found only in Corsica and Sardinia.

But *Locustella lanceolata* is quite a good species, nearly allied to our Grasshopper Warbler (*L. nævia*). It is remarkable that when Seebohm wrote the fifth volume of the 'Catalogue of Birds' in 1881 there was not a single example of this bird in the British Museum. Now, we are glad to say, there are in the National Collection upwards of 50 skins from various localities, which well illustrate its wide geographical range, namely :—

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* 'Ibis,' 1905, p. 288.

Santander, Spain (*Irby*, 26th June, 1876).
Lake Baical (*Dybowski*).
Lower Pegu (*Oates*, Oct.–Feb.).
South Tenasserim (*Davison*, Dec.–April).
Malacca (*Dr. Maingay*).
Andamans (*Wimberley*, Dec.).
Labuan (*Everett*).
Manilla (*Maitland Heriot*).
Amoy, May; Chefoo, May; Canton, Oct. (*Swinhoe*).
Chinkiang, May (*Rickett*).
S. Yezo, Japan, August.

To these localities we may add Heligoland (see J. f. O. 1910, p. 415) and Hainan (Hartert, Nov. Zool. xvii. p. 229).

The B.O.U. Expedition for the Exploration of Central New Guinea *.—The last letters from Mr. Goodfellow are dated on April 3rd from Dobo, Aroo Islands. He was then on his way back from Amboina, where he had been obliged to go to hire some additional carriers; he had engaged twenty-four men from Banda, who seemed likely to do well. The "base-camp" of the Expedition had been removed from Wakatimi up the valley of the Mimika to Toupoué, a village about six miles from the mountain-range, where a new storehouse had been built, and the natives were quite friendly.

The Gurkhas had cut a road for some miles up the mountain, by which Mr. Wollaston and Capt. Rawling had reached a considerable altitude. During their ascent an important discovery was made—that at an elevation of about 2000 feet there existed a tribe of pygmies, of which the average height was about 4 feet 3 inches. It had been generally supposed that there were no dwarf races in the Papuan Subregion.

Mr. C. H. B. Grant, a well-known collector, has been sent out by the Committee to replace Stalker (whose unfortunate death has been already reported *); he left England on June 18th for Singapore.

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* See above, p. 377.

THE IBIS.

NINTH SERIES.

No. XVI. OCTOBER 1910.

XXVIII.—*On the Birds of Paraguay.*—Part IV. By CHARLES CHUBB, F.Z.S., M.B.O.U., Zoological Department, British Museum *.

Family TYRANNIDÆ.

110. TÆNIOPTERA NENGETA.

Lanius nengeta Linn. Syst. Nat. i. p. 135 (1766: Brazil).

Pepoazá Azara, Apunt. ii. p. 166. no. cci. (1805).

Tyrannus pepoaza Vieill. N. Dict. d'Hist. Nat. xxxv. p. 91 (1819: Paraguay).

Tænioptera nengeta Berlepsch, J. f. O. 1887, pp. 12, 117 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 11 (1888); Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 649 (1906).

a, b. ♂ ♀ ad. Sapucay, April 21, 23, 1903.

Bill and feet black; iris pinkish white.

c. ♀ ad. Sapucay, May 7, 1903.

d. ♀ ad. „ April 18, 1904.

e. ♂ ad. „ June 23, 1904.

f, g. ♂ ♀. „ July 30, 1904.

These individuals agree with the large series in the British Museum. The grey on the under surface appears to be darker and more extended on specimens collected in the month of April, and wears off again almost to a band on the breast in July. The upper surface is also darker in April, including the black at the base of the tail and the ends of the primaries.

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* Concluded from above, p. 534.

Three eggs, collected on October 16, 1903, are pinky white to rich cream-coloured with large sepia-brown blotches, mostly at the larger end, and underlying spots of lavender-grey. Axis 1·05–1·15 inch; diam. 0·85.

[This species is resident, but not common, in Paraguay. As it is a camp-loving bird and is usually perched upon some conspicuous post or dead tree its presence is easily detected, and its white-barred wings serve to identify it when in flight. During the breeding-season individuals are to be met with in pairs, but the rest of the year they are solitary. Although they undoubtedly nest here, I know nothing of their breeding-habits.—*W. F.*]

111. TÆNIOPTERA IRUPERO.

Pepoazá iruperó Azara, Apunt. ii. p. 171. no. cciv. (1805).

Tyrannus irupero Vieill. N. Dict. d'Hist. Nat. xxxv. p. 92 (1819: Paraguay).

Tænioptera irupero Berlepsch, J. f. O. 1887, p. 12 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 13; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 536 (1906).

a. ♀ ad. Sapucay, June 11, 1904.

Bill and feet black; iris brown.

b. ♀ ad. Sapucay, August 23, 1904.

[This is one of our rare Paraguayan birds and is only to be met with in swampy districts which border on the forest. A lonely tree of low growth is the most favourite perch of this bird, the white plumage making it visible at a considerable distance. It is generally safe from the hunter, as the impassable swamps in which it lives are wisely avoided. The only time when it is possible to shoot it is in the early morning, when it first leaves the shelter of the forest and being hungry is somewhat more careless than during the rest of the day.—*W. F.*]

112. Alectrurus risorius.

Cola rara pardo y blanco Azara, Apunt. ii. p. 244. no. ccxxvi. (1805).

Le guira-yetapa Vieill. N. Dict. d'Hist. Nat. xii. p. 409 (1819: Paraguay).

Muscicapa risora Vieill. Gal. des Ois. i. p. 209, pl. cxxxi. (1825: Paraguay).

Alectorurus guira-yetapa Berlepsch, J. f. O. 1887, p. 117 (Paraguay).

Alectrurus risorius Sclater, Cat. B. Brit. Mus. xiv. p. 39; Ihering, Revista Mus. Paulista, vi. p. 324.

a, b. ♀ ad., ♂ imm. Sapucay, April 17, 1903.

c. ♀ ad. Sapucay, April 22, 1904.

d. ♂ ad. ,, June 6, 1904.

113. Cybernetes yetapa.

Yiperú Azara, Apunt. i. p. 322. no. lxxv. (1802).

Muscicapa yetapa Vieill. N. Dict. d'Hist. Nat. xxi. p. 460 (1818: Paraguay).

Cybernetes yetapa Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 40; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

Gubernetes yetapa Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 647 (1906).

a. ♀ ad. Sapucay, November 16, 1902.

b, c. ♀ ad. ,, May 3, 6, 1903.

Bill horn-coloured; feet black; iris brown.

d, e. ♂ ♀ ad. Sapucay, July 17, 19, 1904.

[Resident, although nowhere common. It is very widely distributed through Central Paraguay, its favourite haunts being the low swampy grounds surrounded by forest, where there is an abundance of insect life. Like *Tænioptera irupero,* the usual perch is some of the low swamp trees. It is generally found in pairs throughout the year, and I have never met with larger numbers. Its food consists of insects, which are captured on the wing.

This bird is the true "Guira yetapa," as it remains with us all the year round, whereas the Scissor-tail, "*Milvulus* *tyrannus*," is partially migratory and is seldom met with during the winter months. The nest is built in a dense matted clump of swamp grass, and three eggs is a full clutch.—*W. F.*]

114. SISOPYGIS ICTEROPHRYS.

Suiriri obscuro y amarillo Azara, Apunt. ii. p. 118. no. clxxxiii. (1805).

Muscicapa icterophrys Vieill. N. Dict. d'Hist. Nat. xxi. p. 458 (1818 : Paraguay).

Sisopygis icterophrys Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 41; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a, b. ♂; *c.* ♀ ad. Sapucay, June 7, 17, 1904.
d. ♀ ad. Sapucay, July 17, 1904.
e. ♀ ad. „ August 7, 1904.

[Resident and not uncommon, it can only be met with along the edge of the woods which border the swampy parts and in the thick tangled masses of water-plants.—*W. F.*]

115. CNIPOLEGUS CYANIROSTRIS.

Suiriri negro pico celeste Azara, Apunt. ii. p. 116, ♂ (1805).

Suiriri cabeza y rabadilla de canela Azara, t. c. p. 109, ♀.

Muscicapa cyanirostris Vieill. N. Dict. d'Hist. Nat. xxi. p. 447, ♂ (1818 : Paraguay).

Muscicapa ruficapilla Vieill. t. c. p. 459, ♀ (Paraguay).

Cnipolegus cyanirostris Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 46; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a, b. ♂; *c.* ♀ ad. Sapucay, April 1904.
d. ♂; *e, f.* ♀ ad. „ May 1904.
g, h, i. ♂; *k–n.* ♀ ad. Sapucay, June 1904.
o. ♂ juv. Sapucay, August 13, 1904.
p. ♀ ad. „ September 1, 1904.

[This species is resident and not uncommon. I have met with it both in the large forests and on open camp lands: it seems to be at home everywhere. Like most of the solitary birds there appears to be nothing in particular to note about it. A nest was taken from a banana plantation, where it had been neatly woven into one of the leaves; but even in this unusual place it was not free from the parasitic birds, as two eggs had been laid almost exactly resembling the eggs of the legitimate owner.—*W. F.*]

116. CNIPOLEGUS STRIATICEPS.

Muscisaxicola striaticeps Lafr. et D'Orb. Syn. Av. i., Mag. de Zool. 1837, p. 66 (La Paz, Bolivia).

Cnipolegus cinereus Sclater, P. Z. S. 1870, p. 58 (Corumba, Upper Paraguay); Berlepsch, J. f. O. 1887, p. 131; Sclater, Cat. B. Brit. Mus. xiv. p. 47.

Knipolegus striaticeps Hellmayr, Nov. Zool. xiii. pp. 318, 319 (1906).

a. ♀ ad. Sapucay, April 25, 1903.

Bill horn-coloured above, slaty below; tarsi and feet black; iris red.

117. LICHENOPS PERSPICILLATA.

Motacilla perspicillata Gm. Syst. Nat. i. p. 969 (1788: La Plata).

Suiriri chorreado Azara, Apunt. ii. p. 117. no. clxxxii., ♀ (1805).

Pico de plata Azara, t. c. p. 25. no. ccxxviii., ♂.

Lichenops perspicillata Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 48; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a, b. ♀ ad. Sapucay, May 5, 6, 1904.

c, d. ♂; *e, f.* ♀ ad. Sapucay, June 9–21, 1904.

g. ♂ imm. Sapucay, July 30, 1904.

[This species is resident and fairly common in Paraguay, its favourite perch being one of the branches projecting over the roads through the forest: from this point of vantage it is very conspicuous to any person, the bright yellow bill and fleshy circle round the eye and also the white-tipped wings attracting the eye at once. It is solitary except during the nesting-season, when the birds are occasionally seen in company.—*W. F.*]

118. Copurus colonus.

Colon Azara, Apunt. ii. p. 114. no. clxxx. (1805).

Muscicapa colonus Vieill. N. Dict. d'Hist. Nat. xxi. p. 448 (1818 : Paraguay).

Copurus colonus Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 50; Oberh. Proc. U.S. Nat. Mus. xxv. p. 139 (1902 : Sapucay); Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 645.

a. ♂ ad. Sapucay, November 7, 1902.
b. ♀ imm. ,, February 24, 1904.
c. ♀ ad. ,, March 27, 1903.

Bill and feet black; iris brown.

d. ♀ ad. Sapucay, April 27, 1904.
e, *f*. ♂ ♀ ad. Sapucay, May 5, 6, 1904.
g. ♂ ad. Sapucay, June 13, 1903.

[Resident but not common, it can at times be met with along the clear cattle-tracts of the woods. The long tail-feathers appear on the young bird about the end of July or early in August.—*W. F.*]

119. Machetornis rixosa.

Suiriri Azara, Apunt. ii. p. 148. no. cxcvii. (1805).

Tyrannus rixosus Vieill. N. Dict. d'Hist. Nat. xxv. p. 85 (1819 : Paraguay).

Machetornis rixosa Berlepsch, J. f. O. 1887, p. 12 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 52; Oates, Cat. Birds' Eggs Brit. Mus. iii. p. 189, pl. 4. fig. 5 (1903); Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 648.

a. ♂ ad. Sapucay, June 9, 1903.
b. ♂ ad. Ybitimi, January 31, 1904.
c. ♀ ad. Sapucay, July 19, 1904.

An egg, obtained on October 11, 1903, has the ground-colour grey with blackish spots, blotches, pencillings, and underlying spots of lead-grey, distributed over the entire surface. Axis 1·0 inch; diam. 0·6.

[Resident and common. Nest usually built in a hole in a tree. Three eggs appear to be a full clutch, but at times a parasitic egg is laid with the others; in fact, in one case the parasitic egg was laid before the proper bird had had a chance to lay at all.—*W. F.*]

120. PLATYRHYNCHUS PLATYRHYNCHUS.

Broad-billed Tody Lath. Gen. Syn. i. pt. 2, p. 664 (1782: Museum of the Prince of Orange).

Todus platyrhynchos Gm. Syst. Nat. i. p. 446 (1788), ex Lath.

Todus rostratus Lath. Ind. Orn. i. p. 268 (1790).

Platyrhynchus rostratus Sclater, Cat. B. Brit. Mus. xiv. p. 65.

Platyrhynchus platyrhynchus Sharpe, Hand-list B. iii. p. 100 (1901).

a. ♂ ad. Sapucay, September 9, 1904.

This example is identical, both in colour of plumage and measurements, with others in the British Museum series, from Brazil.

The species is new to the avifauna of Paraguay.

[I have only met with one specimen of this bird and know nothing about it.—*W. F.*]

121. PLATYRHYNCHUS MYSTACEUS.

Bigotillos Azara, Apunt. ii. p. 93, no. clxxiii. (1805).

Platyrhynchus mystaceus Vieill. N. Dict. d'Hist. Nat. xxvii. p. 14 (1819: Paraguay); Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 67; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a. ♂ ad. Sapucay, October 25, 1902.

b, c. ♂ ♀ ad. Sapucay, March 1903–04.

Feet transparent pinky white with veins shewing through; iris brown.

d, e. ♂; *f, g.* ♀ ad. Sapucay, April 1903–04.

h. ♂ ad. Sapucay, May 7, 1904.

i. ♂ ad. „ June 2, 1904.

[This species is resident and not uncommon in the large forests of the district. Like dozens of others of our monte birds its principal occupation is catching flies, and in this it is very expert, its small size giving it a decided advantage in the matted undergrowth in which it lives.—*W. F.*]

122. EUSCARTHMUS MARGARITACEIVENTER.

Tachuri pardo vientre de perla Azara, Apunt. ii. p. 90. no. clxxii. (1805).

Todirostrum margaritaceiventer D'Orb. et Lafr. Syn. Av., Mag. de Zool. 1837, p. 46 (Bolivia).

Euscarthmus margaritaceiventer Berlepsch, J. f. O. 1887, pp. 12, 117 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 80; Oberh. Proc. U.S. Nat. Mus. xxv. p. 139 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a, b. ♀ ad. Sapucay, March 20, 31, 1903.

Bill dark brown; feet pinky slate-coloured; iris brown.

c, d, e. ♂ ad. Sapucay, March 17–31, 1904.

f. ♂ ad. Sapucay, April 6, 1904.

g. ♂ ad. „ June 8, 1904.

[Resident and not uncommon in the forest at Sapucay.—*W. F.*]

123. EUSCARTHMUS GULARIS.

Tachuri cabeza de plomo Azara, Apunt. ii. p. 86. no. clxix. (1805); Vieill. N. Dict. d'Hist. Nat. xxxii. p. 355 (1819).

Muscicapa gularis Temm. Pl. Col. iii. pl. 167. fig. 1 (1823: Brazil).

Euscarthmus gularis Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 81; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a. ♂ ad. Sapucay, October 20, 1902.

b. ♂ ad. „ April 27, 1904.

c. ♂ ad. „ June 25, 1904.

[A rare forest bird in this locality.—*W. F.*]

124. ORCHILUS AURICULARIS.

Platyrhynchos auricularis Vieill. N. Dict. d'Hist. Nat. xxvii. p. 16 (1818: Brazil).

Orchilus auricularis Berlepsch, J. f. O. 1887, p. 131 (Mendoza: South Brazil); Sclater, Cat. B. Brit. Mus. xiv. p. 88; Oberh. Proc. U.S. Nat. Mus. xxv. p. 138 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 324.

a. b. c. ♀ ; *d.* ♂ ad. Sapucay, April 16–30, 1904.

e. ♀ ad. Sapucay, May 2, 1904.

Four of these examples are quite identical with others in the National Collection from Brazil, while the fifth is inclining to "Canary" yellow above and below. However, this can only be regarded as a very pale variety.

[This peculiar little bird is resident and is only met with where the woods are densest and darkest. It is very hard to detect, owing to its small size and the length of time it will remain motionless in one position. The sex can only be distinguished by dissection.—*W. F.*]

125. PHYLLOSCARTES VENTRALIS.

Muscicapa ventralis Temm. Pl. Col. iii. pl. 275. fig. 2 (1824 : Brazil).

Phylloscartes ventralis Berlepsch, J. f. O. 1887, p. 131 (S. Brazil) ; Sclater, Cat. B. Brit. Mus. xiv. p. 92.

a, b. ♂ ad. Sapucay, March 19, 31, 1904.

Bill black above, flesh-coloured below ; tarsi and feet purple slate-coloured.

c. ♀ ad. Sapucay, April 18, 1904.

Bill dark horn-coloured, paler below at base ; tarsi and feet purple slate-coloured ; iris brown.

These examples are identical with the single specimen in the National Collection. The species is new to the avifauna of Paraguay.

[There are quite a dozen species of these birds somewhat like one another and hard to separate in the dim lights and shades of the forest. Their habits differ but slightly, so there is very little to say about them unless the nest can be discovered.—*W. F.*]

126. HABRURA PECTORALIS.

Peccho amarillo Azara, Apunt. ii. p. 80. no. clxv. (1805).

Sylvia pectoralis Vieill. N. Dict. d'Hist. Nat. xi. p. 210 (1817 : Paraguay).

Hapalocercus pectoralis Berlepsch, J. f. O. 1887, p. 117 Paraguay).

Habrura pectoralis Sclater, Cat. B. Brit. Mus. xiv. p. 96; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a. ♀ ad. Sapucay, March 18, 1904.

[I have only met with one specimen.—*W. F.*]

127. CULICIVORA STENURA.

Muscicapa stenura Temm. Pl. Col. iii. pl. 167. fig. 3 (1823: Brazil).

Culicivora stenura Berlepsch, J. f. O. 1887, p. 131 (Missiones and Matto Grosso); Sclater, Cat. B. Brit. Mus. xiv. p. 97.

a. ♂ ad. Sapucay, March 24, 1903.
b, c. ♂ ad. ,, July 24, 27, 1903.
d, e. ♂ ♀ ad. ,, August 16, 1904.

This appears to be the first record of the species from Paraguay.

[Resident but very rare.—*W. F.*]

128. POGONOTRICCUS EXIMIUS.

Muscicapa eximia Temm. Pl. Col. iii. pl. 144. fig. 2 (1823: Brazil).

Pogonotriccus eximius Sclater, Cat. B. Brit. Mus. xiv. p. 98; Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

Hapalocercus albifrons Bertoni, Aves Nuev. Paraguay, p. 121.

a. ♀ ad. Sapucay, October 15, 1902.
b. ♂ ad. ,, March 23, 1903.

Bill, upper mandible black, lower mandible pinky horn-coloured; feet light slate-coloured; iris ruby-brown.

c, d. ♂ ad. Sapucay, April 1903–04.

Bill horn-coloured, paler below; feet bluish slate-coloured; iris brown.

e. ♀ ad. Sapucay, April 27, 1903.

Bill black above, cream-coloured below.

f, g. ♀ ad. Sapucay, July 6, 7, 1904.

Mr. Bertoni was the first to record this species from Paraguay; he described it as new to science under the name of *Hapalocercus albifrons*. On comparison of these examples with specimens in the National Collection, however, I find that they are identical with *Pogonotriccus eximius* of Temminck, as Dr. Ihering has already suggested.

[This species is resident and not uncommon in the forests of this district.—*W. F.*]

129. SERPHOPHAGA SUBCRISTATA.

Contramaestre copetillo ordinario Azara, Apunt. ii. p. 66· no. clx. (1805).

Sylvia subcristata Vieill. N. Dict. d'Hist. Nat. xi. p. 229 (1817: Paraguay).

Serphophaga subcristata Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 102; Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

a. ♂ ad. Sapucay, May 31, 1904.

Bill and feet black; iris brown.

b. ♀ ad. Sapucay, June 6, 1904.

[This tiny Tyrant-bird is by no means common in our woods, although widely distributed through the country. In the dim lights of the large forests it is very hard to distinguish it from *Ornithion obsoletum*, which occurs much more frequently with us.—*W. F.*]

130. MIONECTES RUFIVENTRIS.

Mionectes rufiventris Cab. in. Tsch. Fauna Peruana, Orn. p. 148 note (1846: Brazil); Sclater, Cat. B. Brit. Mus. xiv. p. 114; Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

Hemitriccus barberenæ Bertoni, Aves Nuev. Paraguay, p. 124.

a. ♀ ad. Sapucay, April 11, 1903.

Bill horn-coloured above, pale buff at base of lower mandible; tarsi and feet bluish slate-coloured; iris brown.

b. ♀ ad. Sapucay, June 17, 1904.

These two individuals are identical with others from Brazil, in the British Museum series. I agree, therefore, with Dr. Ihering that *Hemitriccus barberenæ* of Bertoni should be placed as a synonym under the present species.

131. LEPTOPOGON AMAUROCEPHALUS.

Leptopogon amaurocephalus Cab. Archiv Naturg. 1847, p. 251 (Brazil); Sclater, Cat. B. Brit. Mus. xiv. p. 117.

Leptopogon amaurocephalus icastus Oberholser, Proc. Biol. Soc. Washington, xiv. p. 187 (1901: Sapucay).

a. ♀ ad. Sapucay, October 24, 1902.

b, c. ♀ ad. „ November 20, 28, 1902.

d. ♀ ad. „ March 26, 1903.

Bill and feet black; iris brown.

e. ♀ ad. Sapucay, March 28, 1903.

Bill black, cream-coloured at base of lower mandible; feet bluish horn-coloured.

f. ♂ ad. Sapucay, March 18, 1904.

g, h. ♂; *i.* ♀ ad. Sapucay, April 28–30, 1904.

k, l. ♂ ♀ ad. Sapucay, May 2, 3, 1904.

I have compared this series with an equal number of *L. amaurocephalus* Cab. from various localities, in the British Museum, but fail to find any characters by which to distinguish the Paraguay bird from the present species. I have therefore treated *L. amaurocephalus icastus* Oberh. as a synonym of the present species.

[This species is resident and can generally be met with throughout the wooded districts.—*W. F.*]

132. CAPSIEMPSIS FLAVEOLA.

Muscicapa flaveola Licht. Verz. Doubl. p. 56 (1823: Bahia).

Capsiempis flaveola Sclater, Cat. B. Brit. Mus. xiv. p. 120.

Capsiempis flaveola flaveola Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 645.

a, b. ♂ ad. Sapucay, April 1903–04.

Bill and feet black; iris brown.

These two individuals are identical with others, in the National Collection, from Brazil. This is the first record of the species from Paraguay.

[This is another of our rare Tyrant-birds.—*W. F.*]

133. Phæomyias murina.

Platyrhynchus murinus Spix, Av. Bras. ii. p. 14, tab. 16. fig. 2 (1825).

Phæomyias murinus Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 646 (1906).

Myiopatis semifusca Sclater, Cat. B. Brit. Mus. xiv. p. 123 (part.).

a. ♂ ad. Sapucay, September 13, 1904.

Bill blackish, buff at base of lower mandible; iris brown; tarsi and feet blackish.

134. Phillomyias virescens.

Muscicapa virescens Temm. Pl. Col. iii. pl. 275. fig. 3 (1824: Brazil).

Phyllomyias virescens Pelz. Orn. Bras. p. 105 (1871); Sclater, Cat. B. Brit. Mus. xiv. p. 121 note; Berl. et Hellm. J. f. O. 1905, p. 25; Sharpe, Hand-list B. iii. p. 118 (1901).

a. ♀ ad. Sapucay, May 8, 1903.

b, c. ♂ ad. „ April 6, 26, 1904.

Bill dark horn-coloured above, dirty buff below; tarsi and feet black; iris brown.

d, e. ♂ ad. Sapucay, July 17, 26, 1904.

This species is new to the avifauna of Paraguay.

[This species is resident and one or two individuals can generally be met with in a day's hunting.—*W. F.*]

135. Acrochordopus subviridis.

Phyllomyias subviridis Pelz. Orn. Bras. p. 105 (1871: Rio Janeiro; Ypanema; Curytiba).

Phyllomyias burmeisteri Sclater (nec Cab. et Hein.), Cat. B. Brit. Mus. xiv. p. 122.

Acrochordopus subviridis Berlepsch & Hellmayr, J. f. O. 1905, p. 26.

a. ♂ ad. Sapucay, March 23, 1904.

Bill black above, buff below; tarsi and feet black; iris brown.

b, c. ♂; *d.* ♀ ad. Sapucay, June 1904.

e, f. ♂ ♀ ad. Sapucay, July 15, 27, 1904.

This distinct genus and rare species is new to the avifauna of Paraguay.

136. Ornithion obsoletum.

Tachuri rey Azara, Apunt. ii. p. 72. no. clxi. (1805).

Muscicapa obsoleta Temm. Pl. Col. iii. pl. 275. fig. 1 (1824: Brazil); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 638 (1908).

Ornithion obsoletum Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 127; Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

Rengerornis leucophthalmus Bertoni, Aves Nuev. Paraguay, p. 124 (1901).

Ornithion obsoletum obsoletum Hellmayr, Nov. Zool. xv. p. 44 (1908).

a. ♂ ad. Ybitimi, February 11, 1904.
b. ♀ ad. Sapucay, March 23, 1904.
c, d. ♂ ♀ ad. Sapucay, April 1903–04.
e. ♀ ad. Sapucay, June 7, 1904.
f. ♂ ad. „ July 18, 1904.
g. ♀ ad. „ September 1, 1904.

Bill horn-coloured above, buff below at base; feet slate-coloured; iris brown.

The examples enumerated above are identical with the series in the British Museum from Brazil. I agree, therefore, with Dr. Ihering and Mr. C. W. Richmond that *Rengerornis leucophthalmus* Bertoni is inseparable from the present species.

[Resident and not uncommon in the central parts of Paraguay, although I never met with it through the southern provinces.—*W. F.*]

137. Elainia viridicata.

Contramaestre pardo verdoso corona amarilla Azara, Apunt. ii. p. 57. no. clvi. (1805).

Sylvia viridicata Vieill. N. Dict. d'Hist. Nat. xi. p. 171 (1817: Paraguay).

Helinæa viridicata Hartl. Ind. Azara, p. 11 (1847).

Elænia viridicata Berlepsch, J. f. O. 1887, p. 118 (Paraguay); id. Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 425 (1907).

a, b. ♂ ♀ ad. Sapucay, November 6, 28, 1902.

c–g. ♂ ad. ,, March 10–27, 1904.

Bill horn-coloured above, reddish below; feet very dark slate-coloured; iris pale brown.

h, i. ♂ ♀ ad. Sapucay.

[I do not know positively whether this species is resident or not. It certainly occurs here during March, which is almost enough to establish its permanent residence.—*W. F.*]

138. Elainia parvirostris.

Elainea parvirostris Pelz. Orn. Bras. pp. 107, 178 (1868).

Elainea albiceps Berlepsch (nec auct.), J. f. O. 1887, p. 12 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 141; Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

? *Elainea arechavaletæ* Bertoni, Aves Nuev. Paraguay, p. 119.

Elænia parvirostris Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 412 (1907).

a–e. ♂; *f.* ♀ ad. Sapucay, October 11–30, 1902.

[This species is resident and fairly common through the forest district of Central and Southern Paraguay.—*W. F.*]

139. Elainia flavogaster.

Pipra flavogaster Thunb. Mém. Acad. St. Pétersb. viii. p. 286 (1822: Brazil); Lönnb. Ibis, 1903, p. 241.

Elainea pagana (Licht.); Sclater, Cat. B. Brit. Mus. xiv. p. 137; Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

Elainea pagana pagana Oberh. Proc. U.S. Nat. Mus. xxv. p. 137 (1902: Sapucay).

Elænia flavogaster Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 384 (1907).

a. ♀ ad. Sapucay, October 25, 1902.

Bill dark horn-coloured above, pinkish on lower mandible; tarsi and feet black; iris brown.

b. ♀ ad. Sapucay, December 3, 1902.

c. ♀ ad. ,, March 19, 1903.

Bill and feet dark brown; iris brown.

d. ♂; *e, f.* ♀ ad. Sapucay, June 6–19, 1904.

g. ♀ ad. Sapucay, July 18, 1904.

h. ♂; *i, k, l.* ♀ ad. Sapucay, September 3–13, 1904.

[This species is resident and quite the commonest of all the genus. The nest is one of the most lovely things imaginable, formed of moss and bound together with spider-webs; two eggs only are laid, and nesting goes on until quite late in the season.—*W. F.*]

140. ELAINIA MESOLEUCA.

Elainea mesoleuca Cab. & Heine, Mus. Hein. ii. p. 60 (1859); Sclater, Cat. B. Brit. Mus. xiv. p. 153.

Elænia mesoleuca Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 414 (1907).

a, b. ♂ ♀ ad. Sapucay, March 18, 31, 1904.

c. ♀ ad. Sapucay, April 29, 1904.

d. ♀ ad. „ May 8, 1904.

Bill horn-coloured above, pinkish below at base; tarsi and feet black; iris brown.

141. ELAINIA CANICEPS.

Tyrannula caniceps Swains. B. Brazil and Mexico, pl. 49 (1841: Brazil).

Elainea caniceps Sclater, Cat. B. Brit. Mus. xiv. p. 151.

Myiopagis caniceps Sharpe, Hand-list B. iii. p. 117 (1901); Oberh. Proc. U.S. Nat. Mus. xxv. p. 137 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 325 (Paraguay).

Elænia caniceps Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 422 (1907); Hellmayr, Nov. Zool. xv. p. 45 (1908).

Elainea taczanowskii Berlepsch, Ibis, 1883, p. 137 (Bahia); Sclater, Cat. B. Brit. Mus. xiv. p. 144.

Elænia cinerea taczanowskii Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 433 (1907).

a. ♀ ad. Sapucay, April 29, 1904.

Bill and feet black; iris light brown.

b–e. ♂; *f.* ♀ ad. Sapucay, July 1904.

Iris brown with whitish outer circle.

g. ♂ ad. Sapucay, August 20, 1904. Iris whitish.

h. ♂ ad. Sapucay, September 12, 1904.

142. SUIRIRI SUIRIRI.

Suiriri ordinario Azara, Apunt. ii. p. 111. no. clxxix. (1805).

Muscicapa suiriri Vieill. N. Dict. d'Hist. Nat. xxi. p. 487 (1818: Paraguay).

Empidagra suiriri Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 154.

Suiriri suiriri Oberh. Proc. U.S. Nat. Mus. xxv. p. 136 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a. ♂ ad. Sapucay, December 2, 1902.

b, c. ♀ ad. „ May 1903–04.

Bill and feet black; iris reddish brown.

d, e, f. ♂; *g–l.* ♀ ad. Sapucay, June 2–21, 1904.

[Resident and fairly common throughout Paraguay.—*W. F.*]

143. LEGATUS ALBICOLLIS.

Suiriri chorreado sin roxo Azara, Apunt. ii. p. 123. no. clxxxvi. (1805).

Tyrannus albicollis Vieill. N. Dict. d'Hist. Nat. xxxv. p. 89 (1819: Paraguay).

Legatus albicollis Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 155; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay); Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 474 (1907).

a, b. ♂ ad. Sapucay, October 8, 13, 1902.

c, d. ♀ ad. „ November 6, 8, 1902.

e, f. ♂ ad. et imm. Ybitimi, February 6, 12, 1904.

Bill and feet black; iris brown.

g, h. ♀ ad. Sapucay, March 12, 20, 1904.

[I do not know whether this species is resident or not, as I have only noticed it during February and March. It can usually be met with along the forest streams.—*W. F.*]

144. RHYNCHOCYCLUS SULPHURESCENS.

Platyrhynchus sulphurescens Spix, Av. Bras. ii. p. 10, pl. 12. fig. 1 (1825: Rio Janeiro, Piauhy, and River

Amazon); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 643 (1906).

Rhynchocyclus sulphurescens Berlepsch, J. f. O. 1887, p. 131 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 168; Oberh. Proc. U.S. Nat. Mus. xxv. p. 136 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 324 (Paraguay).

a. ♂; *b, c*. ♀ ad. Sapucay, March 7, 27, 1904.

Bill black above, cream-coloured below; tarsi and feet dark slate-coloured; iris brown.

d, e. ♀ ad. Sapucay, April 18, 30, 1904.
f. ♀ ad. ,, July 28, 1904.
g. ♀ ad. ,, August 30, 1904.

These seven individuals are perfectly identical with others, in the British Museum, from Brazil and other localities.

[This species is common throughout Central Paraguay wherever there are large forests. I do not think there is anything peculiar about it which does not apply to many others of the same family. I have noticed that its favourite hunting-ground is along the banks of the forest streams, but that is the favourite place of other birds which catch flies on the wing. The nest is a wonderful purse-shaped affair some seven inches in length, the entrance leading from below upwards. Suspended as it is from the extreme tip of a slender branch and overhanging a stream it is safe from everything but men, and possibly for this reason the species is so common. All the birds which build in the forks of trees or along the larger branches must pay a heavy toll annually to the numerous snakes, opossums, &c. which inhabit the woods.—*W. F.*]

145. RHYNCHOCYCLUS GRISESCENS, sp. nov.

Allied to *R. sulphurescens*, but differs in being olive-grey above instead of green; the head somewhat darker and inclining to lead-colour; tail-feathers pale brown, edged with whitish; quills also pale brown, margined with olive-grey. The two bars on the wings, formed by the margins of the median and greater coverts, are white instead of yellow:

the throat and chest olive-grey, not yellow; the middle of the abdomen whitish, in place of yellow; the under tail-coverts buff towards the ends; the under wing-coverts white instead of yellow. Bill black above, greyish white below; tarsi and feet bluish slate-coloured; iris brown. Total length 5·2 inches; culmen 0·6; wing 2·55; tarsus 0·8.

a. ♀ ad. Sapucay, March 29, 1903.

146. CONOPIAS TRIVIRGATA.

Muscicapa trivirgata Wied, Beitr. Nat. Bras. iii. p. 871 (1831: Bahia).

Conopias trivirgata Sclater, Cat. B. Brit. Mus. xiv. p. 173; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

Myiarchus stauffenbacherianus Bertoni, Aves Nuev. Paraguay, p. 117.

a. ♀ ad. Sapucay, October 6, 1902.

Iris light brown.

b, c. ♂ ad. Sapucay, July 18, 20, 1904.

Bill and feet black; iris brown.

d. ♀ ad. Sapucay, August 3, 1904.

e, f. ♀ ad. Sapucay, September 1, 9, 1904.

These specimens are identical with others from South-east Brazil in the National Collection. I do not, therefore, see any reason for upholding *Myiarchus stauffenbacherianus* Bertoni, and have placed it as a synonym of the present species, as suggested by Dr. Ihering.

[This species is resident but rare. It can only be found in the large forests of the district: I have never met with it elsewhere. Like most of the larger Tyrant-birds of the montes, the open tracts are its favourite places, where flight is possible after insects without too much care being necessary to avoid obstacles.—*W. F.*]

147. PITANGUS BOLIVIANUS.

Bientevéo ó puitaguá Azara, Apunt. ii. p. 157. no. cc. (1805).

Saurophagus bolivianus Lafr. Rev. Zool. 1852, p. 463 (Chuquisaca, Bolivia).

Pitangus bolivianus Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 177.

Pitangus sulphuratus bolivianus Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a. ♂ ad. Sapucay, May 1, 1903.

Bill and feet black; iris brown.

A clutch of three eggs, collected on October 11, 1903, are cream-coloured, with dark brown and black spots sparsely distributed over the greater part of the surface, but clustered more thickly at the larger end, where they form an indistinct zone. Axis 1·05 to 1·1 inch; diam. 0·8 to 0·85.

A second clutch, of three, obtained on November 16, 1903, are smaller and more elongated in form, with scarcely any spots beyond those at the larger end, where they form quite a thick zone. Axis 1·05 to 1·1 inch; diam. 0·7 to 0·75.

[Resident and fairly common throughout Paraguay. There is very little to add to the knowledge of this well-known bird.—*W. F.*]

148. SIRYSTES SIBILATOR.

Pitador Azara, Apunt. ii. p. 135. no. cxci. (1805).

Muscicapa sibilator Vieill. N. Dict. d'Hist. Nat. xxi. p. 457 (1818: Paraguay).

Sirystes sibilator Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 181; Oberh. Proc. U.S. Nat. Mus. xxv. p. 136 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, April 11, 30, 1903.

Bill horn-coloured; feet dark slate-coloured, almost black; iris brown.

c. d, e. ♀ ad. Sapucay, March 24–30, 1904.

Two of the females have rufous margins to the outer greater wing-coverts and a certain amount of yellow wash on the under surface, while a third female has more yellow below but no rufous on the greater coverts. The latter colour I imagine to be an indication of immaturity.

[Another of our common birds. Its favourite haunts are in the low trees bordering the small streams flowing through the open camp-lands. It feeds generally upon the insects flying over the water.—*W. F.*]

149. EMPIDONAX BIMACULATUS.

Muscipeta bimaculata d'Orb. et Lafr. Syn. Av., Mag. de Zool. 1837, p. 48 (Yungas, Bolivia).

Empidonax bimaculatus Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 224; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

Empidochanes fuscatus bimaculatus Berlepsch & Hellmayr, J. f. O. 1905, p. 22; Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 480 (1907).

a. ♀ ad. Sapucay, November 21, 1902.
b. Imm. ,, March 29, 1903.
c. ♂ ad. Ybitimi, February 7, 1904.
d–i. ♂ ad. Sapucay, August 6–30, 1904.
k–n. ♂ ♀ ad. ,, September 2–12, 1904.

The young bird differs from the adult in being pale rufous brown above instead of olive-brown; the head and sides of the face are cinnamon-rufous, somewhat paler on the latter; the throat and chest similar in colour washed with yellow, the remainder of the under surface is yellowish; the wing-coverts, inner secondaries, and tail-feathers are broadly margined with rufous instead of buff as in the adult.

[This species is resident and not uncommon in the wooded districts of Central Paraguay. A lover of the gloomy thickets of the forest, it is never met with in the open parts, but seems to delight in the tangled undergrowth and low-growing trees, undoubtedly finding this a profitable hunting-ground.—*W. F.*]

150. EMPIDONAX EULERI.

Empidochanes euleri Cab. J. f. O. 1868, p. 195 (Cantagalla, Rio Janeiro); Berlepsch & Hellmayr, J. f. O. 1905, pp. 21, 22; Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 480 (1907).

Empidonax bimaculatus Sclater, Cat. B. Brit. Mus. xiv. p. 224, part.

a. b. ♂ ♀ ad. Sapucay, August 14, 28. 1904.

♂. Bill black above, pinkish below; feet brown; iris brown.

151. Myiodynastes solitarius.

Suiriri chorreado todo Azara, Apunt. ii. p. 145. no. cxcvi. (1805).

Tyrannus solitarius Vieill. N. Dict. d'Hist. Nat. xxxv. p. 88 (1819: Paraguay).

Myiodynastes solitarius Berlepsch, J. f. O. 1887, pp. 18, 118 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 185; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a. ♂ ad. Sapucay, October 17, 1902.

b, c. ♂ ad. ,, November 14, 29, 1902.

d, e. ♂ imm. ,, February 15, 19, 1904.

f, g, h. ♂ ♀ ad. et imm. Ybitimi, February 2, 3, 1904.

♂. Bill black to horn-coloured below; tarsi and feet dark slate-coloured.

i. ♂ ad. Sapucay, September 13, 1904.

These specimens appear to be quite identical with a series of twenty-one examples in the National Collection from various localities in South America.

The young bird is distinguished from the adult by the rufous margins to the feathers of the crown and the sulphur or orange bases to the feathers of the head, also by the rufous margins to the upper wing-coverts.

[This species is resident, but not common. The haunts of these birds are invariably along the forest-streams. I have never seen them in the open, and I know nothing more about their habits.—*W. F.*]

152. Megarhynchus pitangua.

Lanius pitangua Linn. Syst. Nat. i. p. 136 (1766: Brazil).

Ñeiñei Azara, Apunt. ii. p. 155. no. cxcix. (1805).

Megarhynchus pitangua Berlepsch, J. f. O. 1887, pp. 12, 118 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 189; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a. ♀ ad. Sapucay, October 27, 1902.

b. ♂ ad. ,, November 15, 1902.

c. ♂ ; *d, e.* ♀ ad. Sapucay, April 6–18, 1902.

Bill and feet black ; iris brown.

f, g. ♂ ad. Sapucay, May 5, 1903.

Four of the above-mentioned individuals are more or less immature, judging from the rufous margins on the upper wing-coverts and primaries.

A young bird, in the British Museum, is distinguished from the adult more particularly by its brown upper surface, though it is blackish on the crown, and the feathers are everywhere margined with rufous ; there is no trace of any yellow or orange to the bases of the feathers on the head, the yellow of the under surface is paler and more inclining to sulphur-yellow.

Three eggs, collected November 25, 1902, are creamy white blotched and streaked with brown, particularly at the larger end, and shew underlying spots of lead-grey. Axis 1·05–1·1 inch ; diam. 0·8.

The nest is loosely constructed of white grass with a few pieces of creeping plants interwoven.

This bird is resident but not common, according to Mr. Foster.

153. PYROCEPHALUS RUBINEUS.

Muscicapa rubineus Bodd. Tabl. Pl. Enl. p. 42 (1783).

Churrinche Azara, Apunt. ii. p. 105. no. clxxvii. (1805).

Platyrhynchus coronata Vieill. Enc. Méth. ii. p. 840 (1823).

Pyrocephalus rubineus Berlepsch, J. f. O. 1887, p. 118 (Paraguay) ; Sclater, Cat. B. Brit. Mus. xiv. p. 211 ; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a, b. ♂ ; *c.* ♀ ad. Sapucay, April 18, 24, 1903.

Bill and feet black ; iris brown.

d. ♂ ad. Sapucay, May 3, 1903.

e–i. ♂ ad. et imm. Sapucay, April 6–21, 1904.

k, l. ♀ ad. Sapucay, April 6–21, 1904.

m. ♀ ad. ,, September 3, 1904.

This series shews almost every gradation of plumage from the young male to the adult bird. The female is distinguished by the absence of red in the plumage and by the yellow tufts on the lower flanks.

[I could not say positively whether this species is with us all the year round, as it is more of an open camp bird than a forest lover. In the neighbourhood of Asuncion it is much more common than at Sapucay. I have met with it from September to April, but whether it remains on the open lands during the cold months of winter I do not feel sure enough to say, but I think it very probable it only seeks the shelter of the forest at that period and is not migratory.—*W. F.*]

154. EMPIDOCHANES FUSCATUS.

Muscipeta fuscata Wied, Beitr. Naturg. Brasil. iii. part 2, p. 902 (1831: Rio Janeiro).

Empidochanes fringillarius Pelz. Orn. Bras. p. 116 (1871: Sabitiba; Rio Janeiro; Ypanema); Sclater, Cat. B. Brit. Mus. xiv. p. 216.

Empidochanes fuscatus Berlepsch & Hellmayr, J. f. O. 1905, p. 21; Berlepsch, Proc. 4th Intern. Orn. Congr., 'Ornis,' xiv. p. 480 (1907).

a. ♂ ad. Sapucay, November 18, 1902.

b. ♀ ad. ,, March 19, 1903.

Bill and feet light purple-brown; iris brown.

c. ♀ ad. Sapucay, April 6, 1903.

Bill horn-coloured, lighter below: feet purplish slate-coloured; iris light brown.

These specimens are identical with others, in the National Collection, from Matto Grosso and South-eastern Brazil.

155. MYIOCHANES CINEREUS PILEATUS.

Platyrhynchus cinereus Spix, Av. Bras. ii. p. 11, pl. 13. fig. 2 (1825: Amazon Forests *errore*!).

Myiochanes cinereus Sclater, Cat. B. Brit. Mus. xiv. p. 245; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 645 (1906).

Contopus pileatus Ridgw. Proc. U.S. Nat. Mus. viii. p. 21 (1885).

Blacicus pileatus, Oberholser, *op. cit.* xxv. p. 135 (1902: Sapucay).

a. ♂ ad. Sapucay, April 27, 1904.
b, c. ♂; *d.* ♀ ad. Sapucay, July 5–30, 1904.
e, f. ♂; *g, h.* ♀ ad. „ August 4–30, 1904.

♂. Bill black above, creamy buff below; feet black.

These examples are paler in colour both above and below, and thus differ from *M. cinereus* in being dark ashy grey on the upper surface tinged with olive instead of blackish grey; the head is sooty brown, not black, the colour not so sharply defined as in *M. cinereus.* Under surface ashy grey, washed with yellow on the abdomen, instead of dusky grey. Total length 5·6 inches, culmen 0·6, wing 2·9, tail 2·5, tarsus 0·55.

156. MYIARCHUS FEROX.

Muscicapa ferox Gm. Syst. Nat. i. p. 934 (1788: Cayenne).

Suiriri pardo amarillo mayor Azara, Apunt. ii. p. 140. no. cxciv. (1805).

Myiarchus ferox Sclater, Cat. B. Brit. Mus. xiv. p. 253; Kerr, Ibis, 1892, p. 130 (Lower Pilcomayo); Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

Myiarchus cantans Pelz.; Berlepsch, J. f. O. 1887, p. 118 (Paraguay).

a. ♂ ad. Sapucay, October 18, 1902.
b–e. ♂ ad. „ November 6–27, 1902.
f. ♀ ad. „ December 8, 1902.
g–k. ♂ ♀ ad. et imm. Sapucay, April 7, 8, 1903.
l, m, n. ♂; *o.* Ad. Ybitimi, February 7, 9, 1904.
p, q. ♂ ♀ ad. Sapucay, February 16, 1904.
r. ♂ ad. Sapucay, March 5, 1904.

Bill dark horn-coloured; feet black; iris brown.

s. ♂ ad. Sapucay, October 9, 1904.

[This bird is resident and common. The nests differ considerably: one may be made only of fine roots and grass, whilst another may be constructed with short hairs from animals. In the bottom of the nest are generally a few scales from the tarsi of birds or skins of snakes. All the nests that I have met with have been in holes of fencing-posts or in trees; in fact the nest would fall to pieces in any other situation, owing to the loose manner in which it is built.—*W. F.*]

157. EMPIDONOMUS VARIUS.

Suiriri chorreado debaxo Azara, Apunt. ii. p. 125. no. clxxxvii. (1805).

Muscicapa varia Vieill. N. Dict. d'Hist. Nat. xxi. p. 459 (1818: Paraguay).

Empidonomus varius Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 265; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 654 (1906).

a. ♂ ad. Sapucay, March 12, 1904.

Bill black above, reddish brown below; feet black; iris brown.

158. TYRANNUS MELANCHOLICUS.

Suiriri-guazu Azara, Apunt. iii. p. 152. no. cxcviii. (1805).

Tyrannus melancholicus Vieill. N. Dict. d'Hist. Nat. xxxv. p. 48 (1819: Paraguay); Berlepsch, J. f. O. 1887, pp. 13, 118 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 273; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 647.

a. ♀ ad. Sapucay, November 8, 1902.

b, c, d. ♀ ad. et imm. Sapucay, March 1903–04.

e. ♀ imm. Sapucay, April 5, 1904.

[This species is common throughout Paraguay. It is generally to be met with along the watercourses in the open camp lands. The nest, as a general rule, is built in some of the low trees bordering these streams and in a very exposed position; the result of this is that parasitic birds find the nest a very convenient receptacle, and take full advantage of it, this species and *Milvulus tyrannus* being the most common victims.—*W. F.*]

159. MILVULUS TYRANNUS.

Muscicapa tyrannus Linn. Syst. Nat. i. p. 325 (1766: Surinam).

Tixereta Azara, Apunt. ii. p. 130. no. cxcii. (1805).

Tyrannus violentus Vieill. N. Dict. d'Hist. Nat. xxxv. p. 89 (1819: Paraguay).

Milvulus tyrannus Sclater, Cat. B. Brit. Mus. xiv. p. 277; Kerr, Ibis, 1892, p. 130 (Fortin Page).

Milvulus tyrannus violentus Berlepsch, J. f. O. 1887, pp. 13, 118 (Lambaré).

Muscivora tyrannus Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, November 17, 26, 1902.
c. ♀ imm. Sapucay, March 24, 1903.
d. ♂ ad. Sapucay, September 11, 1904.

Bill and feet black; iris brown.

A clutch of three eggs, collected November 13, 1903, are pale cream-coloured with chestnut spots and blotches, more thickly grouped round the larger end, and underlying spots of lilac-grey. Axis 0·85 inch; diam. 0·65.

This bird, according to Mr. Foster, is resident and generally distributed in the open country.

Family OXYRHAMPHIDÆ.

160. OXYRHAMPHUS FLAMMICEPS PARAGUAYENSIS, subsp. n.

Oxyrhynchus flammiceps Temm. Pl. Col. iv. pl. 125 (1823: Brazil).

Oxyrhamphus flammiceps Sclater, Cat. B. Brit. Mus. xiv. p. 281.

a. ♂ ad. Sapucay, May 5, 1903.
b. ♀ ad. ,, October 22, 1902.

Iris very light brown with a touch of orange.

c, d. ♂ ad. Sapucay, June 5, 10, 1904.
e. ♂ ad. ,, July 6, 1904.

Bill dark horn-coloured above, slate-coloured below; tarsi and feet pale bluish; iris orange-buff.

f, g, h. ♀; *i.* ♂ ad. Sapucay, August 24–31, 1904.
k. ♀ ad. Sapucay, September 1, 1904.

Having compared these specimens with the series in the British Museum, I find them to be of a deeper coloured green on the upper parts, the red on the middle of the head being darker in colour, and the yellow of the under surface brighter. Bill dark horn-coloured above, slate-coloured below; tarsi and feet pale bluish; iris orange-buff. Total length 7·4 inches; culmen 0·7; wing 3·9; tail 2·85; tarsus 0·85.

I propose, therefore, that this form be separated as a subspecies under the title *O. flammiceps paraguayensis.*

[This species is resident throughout Central Paraguay. Its favourite haunts are the large forests. It is a powerful bird in flight. I have never been able to find out what its food consists of, as it resents intrusion and is difficult to approach. It is necessary to shoot it at sight without waiting to make observations, as the slightest rustle frightens it away. It is never to be met with in the vicinity of the large towns. With regard to its habits there is but little to say, as I have never succeeded in finding the nest, neither have I ever seen two of the birds together, although nothing much could be learnt from that, as the male and female are similar.—*W. F.*]

Family PIPRIDÆ.

161. PIPRITES CHLORIS.

Pipra chloris Temm. Pl. Col. iii. pl. 172. fig. 2 (1823: Brazil).

Piprites chloris Sclater, Cat. B. Brit. Mus. xiv. p. 284.

a. ♂ ad. Sapucay, March 31, 1903.

b. ♀ ad. „ April 24, 1904.

c, d, e. ♀; *f, g.* ♂ ad. Sapucay, June 20, 23, 1904.

Bill dark horn-coloured above, slate-coloured below; tarsi and feet slate-coloured; iris brown.

h. ♀ ad. Sapucay, July 7, 1904.

The individuals enumerated above are similar to Temminck's figure, and also with the specimens in the National Collection.

The species is new to the avifauna of Paraguay.

[This bird is resident and by no means uncommon in the large forests of Central Paraguay. It is another of those birds which it is difficult to find out anything of their habits. The forests here, at Sapucay, extend for miles in one dense tangled mass of vegetation, and the conditions under which the birds are met with are so different that it is hard to decide whether their presence is natural or accidental.—*W. F.*]

162. CHIROXIPHIA CAUDATA.

Pipra caudata, Shaw & Nodder, Nat. Misc. v. pl. 153 (1794: warmer parts of South America).

Pico cola de pala Azara, Apunt. i. p. 425. no. cxii. (1802).

Pipra longicauda Vieill. N. Dict. d'Hist. Nat. xix. p. 163 (1818: Paraguay).

Chiroxiphia caudata Berlepsch, J. f. O. 1887, p. 118 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 310: Ihering, Revista Mus. Paulista, v. pl. xi. fig. 6 (egg), id. vi. p. 326; Oates, Cat. Birds' Eggs Brit. Mus. iii. p. 217, pl. vi. fig. 3.

a, b. ♀ ad. Sapucay, October 25, 29, 1902.

c, d. ♂; *e.* ♀ ad. Sapucay, November 8, 18, 1902.

f, g. ♂ ad. Sapucay, December 2, 10, 1902.

h. ♂ ad. Sapucay, April 21, 1903.

Bill horn-coloured above, mauve below; feet purplish pink; iris brown.

i. ♂ ad. Sapucay, March 10, 1904.

k. ♂; *l, m.* ♀ ad. Sapucay, May 1903–04.

n–q. ♂ ad. et imm.; *r–v.* ♀ ad. Sapucay, June 2–24, 1904.

w, x. ♂; *y, z.* ♀ ad. Sapucay, July 9–30, 1904.

a′–f′. ♂ ad. et imm.; *g′.* ♀ ad. Sapucay, August 6–29, 1904.

h′. ♀ ad. Sapucay, September 8, 1904.

This series contains six immature males, which shew a gradation of plumage from the young; they only differ from the female when they commence to shew red at the base of the feathers on the crown; this increases in brightness until the scarlet cap of the adult male is attained; the throat is more or less golden olive at first, as are also the sides of face and hind-neck; these parts become black as soon as the red on the head is fully developed. The blue of the body appears to be the last portion to change before the fully adult male plumage is completed.

Two eggs, taken November 19, 1902, are cream-coloured, with spots and blotches of pale chestnut and underlying blotches of lilac formed into an irregular zone chiefly round the larger end of the egg. Axis 0·85 inch; diameter 0·65.

[This species is resident and about the most common of all our monte birds: its light blue body and red crest making it visible at a long distance, the green female being almost as plentiful. Occasionally a female may occur with the red crest also, though not so fully developed as in the male bird it is true, but quite enough to make it distinguishable. I am positive that this is correct; they are not young birds, because the blue body and black neck-feathers all develop together; the female birds to which I refer were fully adult with the ovaries quite large and distinct.—*W. F.*]

163. PIPRA FASCIICAUDA.

Pipra fasciata d'Orb. et Lafr. Syn. Av., Mag. de Zool. 1837, p. 38 (Yuracares, Bolivia); Berlepsch, J. f. O. 1887, p. 131 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 294.

Pipra fasciicauda Hellmayr, Ibis, 1906, p. 9.

Pipra fasciicauda fasciicauda Hellmayr, Nov. Zool. xv. p. 54 (1909).

a. ♂ ad. Sapucay, May 27, 1904.

Bill and feet purplish red; iris white.

b. ♀ ad.; *c, d.* ♂ imm. Sapucay, June 9–22, 1904.

e, f. ♂ ad. et imm. Sapucay, August 18, 1904.

The young male is almost identical with the female in its first plumage, and the first appearances of the male dress may be seen on the chin and throat, where it becomes deep orange-yellow.

[A rare bird with us, the colour of the male marks it at once as a tropical species, although I have met with it during May and in fairly cold weather also.—*W. F.*]

164. SCOTOTHORUS UNICOLOR.

Muscicapa virescens Wied (nec. Temm.) Beitr. Naturg. Bras. iii. p. 802 (1831 : Bahia).

Heteropelma virescens (nec Temm.) Sclater, Cat. B. Brit. Mus. xiv. p. 321.

Scotothorus unicolor (Bonap.), Hellmayr, Wytsman, Gen. Av. Part 9, p. 27, pl. i. fig. 7 (1910).

a, b. ♂ ♀ ad. Sapucay, June 20, 30, 1904.

c, d. ♂ ad. „ July 9, 18, 1904.

e, f, g. ♂; *h.* ♀ ad. Sapucay, August 6–29, 1904.

i. ♂ ad. Sapucay, September 2, 1904.

The only difference that I observe in this series is in the colour of the under tail-coverts, which varies from olive-green to rust-brown; but there are scarcely two specimens with the same shade of colour, so that this cannot be regarded as a character. The measurements are the same as of others in the National Collection from S.E. Brazil.

The species is new to the avifauna of Paraguay.

[This bird is resident but not common, inhabiting the large forests only.—*W. F.*]

Family COTINGIDÆ.

165. TITYRA BRASILIENSIS.

Caracterizado blanco cabos negros Azara, Apunt. ii. p. 176. no. ccvii. (1805).

Psaris brasiliensis Swains. Anim. Menag. p. 286 (1837 : Northern Brazil).

Tityra brasiliensis Berlepsch, J. f. O. 1887, pp. 13, 118 (Lambaré) ; Sclater, Cat. B. Brit. Mus. xiv. p. 329; Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay) ; Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 667 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, November 17, 1902. Iris light brown.

c, d. ♂ ; *e–i.* ♀ ad. Sapucay, March 1904.

k, l. ♀ ad. Sapucay, April 1903–04.

Bill black above, pale slate-coloured below; naked skin round eyes and base of bill purplish red; tarsi and feet pale slate-coloured; iris brown.

The tail, in this series, is uniform black with a trace of white at the extreme base.

[These birds appear during the month of March and by the end of April have left us. I have always thought this very strange, and have watched carefully in the hopes of finding their haunts during the other months of the year. Among the examples secured were a few immature males still in the female plumage, which leads me to believe that they breed in this country, but where they go to afterwards is a mystery.

In this district there are all the conditions imaginable—dense forests with numerous streams, a low range of hills of some nine hundred to a thousand feet in elevation, and level cattle-breeding lands in the north; yet in spite of all these varied localities these birds disappear entirely.

166. TITYRA INQUISITOR.

Lanius inquisitor Licht. Verz. Doubl. p. 50 (1823 : San Paulo).

Tityra inquisitor Berlepsch, J. f. O. 1887, p. 132 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 331; Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

Tityra atricapilla Bertoni, Aves Nuev. Paraguay, p. 109.

a, b. ♂; *c–f.* ♀ ad. Sapucay, March 1904.
g–k. ♂; *l, m.* ♀ ad. ,, April 1904.
n. ♂ ad. Sapucay, September 1904.

These individuals agree perfectly with the series in the British Museum. The white at the base of the tail-feathers is much more extended than in *T. brasiliensis,* reaching some distance from the base along the margin of the inner webs.

[These birds are very numerous during the months of March, April, and the early part of May, and I have obtained one example in September; in the remaining months of the year they are among the rarest species. I have observed them most frequently along the water-courses in large forests, but have not yet found them breeding.—*W. F.*]

167. HADROSTOMUS RUFUS.

Caracterizado canela y corona de pizarra Azara, Apunt. ii. p. 181. no. 208, ♀ (1805).

Caracterizado canela y cabeza negra Azara, t. c. p. 182. no. 209, ♂ juv.

Tityra rufa Vieill. N. Dict. d'Hist. Nat. iii. p. 347, ♀ (1816: Paraguay).

Tityra atricapilla Vieill. t. c. p. 347, ♂ juv.

Hadrostomus atricapillus Berlepsch, J. f. O. 1887, pp. 13, 118 (Lambaré); Sclater, Cat. B. Brit. Mus. xiv. p. 333.

Platypsaris atricapillus Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

Hadrostomus rufus Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 669.

a. ♀ ad. Sapucay, November 27, 1902.

Iris light brown.

b. ♂ ad. Sapucay, April 2, 1903.

Bill black, lower mandible dark slate-coloured; feet very dark slate-coloured, almost black; iris brown.

c. ♀ ad. Ybytimi, February 1904.

Bill black; feet bluish slate-coloured; iris brown.

d. ♂ ad. Sapucay, March 5, 1904.

Bill and feet black; iris brown.

168. PACHYRHAMPHUS CASTANEUS.

Tityra castanea Jard. & Selby, Ill. Orn. i. pl. x. (1827).

Muscipeta aurantia Wied, Beitr. Naturg. Bras. iii. p. 911 (1831).

Pachyrhynchus ruficeps Swains. Anim. in Menag. p. 288 (1837).

Pachyrhamphus rufus Berlepsch (nec Bodd.), J. f. O. 1873, p. 264; Sclater, Cat. B. Brit. Mus. xiv. p. 343; Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

Hadrostomus borellianus Bertoni, Aves Nuev. Paraguay, p. 108.

Pachyrhamphus castaneus Hellmayr, Nov. Zool. xv. p. 57 (1909).

a, b. ♂ ♀ ad. Sapucay, July 28, 1904.

Bill blackish above, slate-coloured below; feet dark slate-coloured; iris brown.

c. ♂ ad. Sapucay, July 28, 1904.

d. ♂ ad. ,, August 6, 1904.

This bird was first recorded from Paraguay by Mr. Bertoni, who described it as new to science under the name of *Hadrostomus borellianus*. The above-mentioned examples, however, agree perfectly with other specimens of *Pachyrhamphus castaneus* in the National Collection from various localities. I agree, therefore, with Dr. Ihering in placing Mr. Bertoni's name as a synonym of the present species.

[This species is undoubtedly resident though rare, and can at times be met with in the vicinity of the water-courses in the large forests.—*W. F.*]

PACHYRHAMPHUS CASTANEUS INTERMEDIUS.

Pachyrhamphus intermedius Berlepsch, Orn. Centralbl. 1879, p. 63 ; id. J. f. O. 1879, p. 208.

The two specimens recorded from Sarayacu, Ecuador, collected by Buckley, are distinguished from *P. castaneus* by the much darker chestnut of the head and back and the brighter cinnamon-rufous of the under surface. Total length 5·2 inches, culmen 0 6, wing 3·35, tail 2·1, tarsus 0·75.

Mr. C. E. Hellmayr suggests that these may belong to the form described as *P. intermedius* by Count von Berlepsch from Venezuela, to which I agree.

169. PACHYRHAMPHUS VIRIDIS.

Caracterizado verde y corona negra Azara, Apunt. ii. p. 184. no. 210 (1805).

Tityra viridis Vieill. N. Dict. d'Hist. Nat. iii. p. 348 (1816: Paraguay); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 593 (1908)

Pachyrhamphus viridis Berlepsch, J. f. O. 1887, pp. 14, 118 (Lambaré) ; Sclater, Cat. B. Brit. Mus. xiv. p. 338 ; Oates, Cat. Birds' Eggs Brit. Mus. iii. p. 202, pl. vi. fig. 5 (1903) ; Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay).

Berlepschia chrysoblephara Bertoni, Aves Nuev. Paraguay, p. 114.

a. ♂ ad. Sapucay, March 20, 1904.

Bill and feet bluish slate-coloured ; iris brown.

b. ♂ ad. Sapucay, April 30, 1904.

Bill light horn-coloured above, cream-coloured below.

c. ♀ ad. Sapucay, June 10, 1904.

Bill dark horn-coloured, lower mandible slate-coloured; iris brown.

d, e. ♂ ♀ ad. Sapucay, July 31, 1904.

Bill slate-coloured, the extreme tip blackish; feet slaty-blue; iris light brown.

f. ♂ ad. Sapucay, August 29, 1904.

Bill and feet slate-coloured; iris reddish brown.

g. ♀ ad. Sapucay, September 12, 1904.

Bill blackish above, lower mandible slate-coloured; feet slate-coloured; iris brown.

Three eggs, collected on October 12, 1903, are lilac-brown with darker brown markings, which are confluent at the larger end, and measure: axis 0·8 inch; diameter 0·6.

[This species is resident and not uncommon in the woods at Sapucay. I have met with it during most months of the year; it favours the clearer part and the edges of the forests. I have found it, occasionally, in the open.—*W. F.*]

170. PACHYRHAMPHUS POLYCHROPTERUS.

Platyrhynchos polychropterus Vieill. N. Dict. d'Hist. Nat. xxvii. p. 10 (1818).

Pachyrhamphus polychropterus Sclater, Cat. B. Brit. Mus. xiv. p. 345; Ihering, Revista Mus. Paulista, vi. p. 327 (Paraguay); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 600 (1908).

Climacocercus cyanocephalus Bertoni, Aves Nuev. Paraguay, p. 112.

Pachyrhynchus polychropterus Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 666.

a. ♀ ad. Sapucay, October 17, 1902.

b. ♂ ad. „ February 27, 1904.

Bill black, lower mandible dark slate-coloured; feet black; iris brown.

c, d. ♀ ad. Sapucay, March 1904.

One of the female specimens is in worn plumage and shews a good deal of grey, with streaks of yellowish, on the under surface, the sides of face and ear-coverts are pure grey, the top of the head exhibits a certain amount of grey more or less mixed with olive-brown.

171. PACHYRHAMPHUS ATRICAPILLUS.

Lanius atricapillus Gm. Syst. Nat. i. p. 302 (1788: Surinam).

Pachyrhamphus atricapillus Sclater, Cat. B. Brit. Mus. xiv. p. 347.

a. ♂ imm. Sapucay, March 15, 1904.

Bill black, white at extreme tip; tarsi and feet slate-coloured; iris brown.

I consider this specimen to be a young male in first plumage, as the measurements agree with those of the adult of that sex, but the general appearance is more like that of the adult female.

172. CASIORNIS RUFUS.

Batara roxo Azara, Apunt. ii. p. 212. no. ccxviii. (1805).

Thamnophilus rufus Vieill. N. Dict. d'Hist. Nat. iii. p. 316 (1816: Paraguay).

? *Muscicapa rubra* Vieill. N. Dict. d'Hist. Nat. xxi. p. 457 (1818: Paraguay).

Casiornis rubra (Vieill.); Berlepsch, J. f. O. 1887, p. 119 (Paraguay); Sclater, Cat. B. Brit. Mus. xiv. p. 365; Ihering, Revista Mus. Paulista, vi. p. 326 (Paraguay).

Casiornis rufa rufa Hellmayr, Nov. Zool. xv. p. 56 (1909).

a. ♂ ad. Sapucay, May 9, 1902.

Bill pinky cream-coloured at base of upper and lower mandibles, black at tip; tarsi and feet very dark slate-coloured; iris brown.

b. ♂ ad.; *c.* ♀ imm. Sapucay, March 1904.

d. ♀ ad. Sapucay, September 3, 1904.

[This species is resident and common throughout Paraguay. The borders of woods and even open lands form its hunting-ground.—*W. F.*]

Family HIRUNDINIDÆ.

173. TACHYCINETA LEUCORRHOA.

Golondrina rabadilla blanca Azara, Apunt. ii. p. 509. no. ccciv. (1805).

Hirundo leucorrhoa Vieill. N. Dict. d'Hist. Nat. xiv. p. 519 (1817: La Plata; Paraguay); Berlepsch, J. f. O. 1887, p. 114 (Paraguay).

Tachycineta leucorrhoa Sharpe, Cat. B. Brit. Mus. x. p. 114 (1885); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

a. ♂ imm. Sapucay, April 5, 1904.

[I have paid very little attention to the Swallows, and cannot say with certainty anything about this bird.—*W. F.*]

174. PROGNE DOMESTICA.

Golondrina domestica Azara, Apunt. ii. p. 502. no. ccc. (1805).

Hirundo domestica Vieill. N. Dict. d'Hist. Nat. xiv. p. 520 (1817: Paraguay).

Progne domestica Sharpe, Cat. B. Brit. Mus. x. p. 177.

Progne chalybea domestica Berlepsch, J. f. O. 1887, pp. 5, 114 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

a. ♀ ad. Sapucay, August 24, 1904.

[This species arrives here about the middle of August, but owing to the scarcity of nesting-places the number is always limited to thirty or forty individuals. Five eggs appear to be a full clutch. The birds migrate from here about the end of February or early in March.—*W. F.*]

Family MUSCICAPIDÆ.

175. POLIOPTILA LACTEA.

Polioptila lactea Sharpe, Cat. B. Brit. Mus. x. p. 453 (1885: South America); id. Hand-list B. iii. p. 242 (1901); Hellmayr, Nov. Zool. xiii. p. 316 (1906).

Polioptila melanocephala Bertoni, Aves Nuev. Paraguay, p. 143.

a. ♂ ad. Sapucay, April 8, 1904.

Bill black, slate-coloured below; iris brown.

b, c. ♂ ♀ ad. Sapucay, July 1904.

Bill black; feet very dark slate-coloured.

d. ♀ ad. Sapucay, July 26, 1904.

Bill and feet black; iris brown.

The addition of these examples to the British Museum was very welcome, as the exact habitat of the species was previously unknown.

[This species is one of our very rare "monte" birds. I know nothing whatever of its habits.—*W. F.*]

Family MIMIDÆ.

176. MIMUS TRIURUS.

Calandria tres colas Azara, Apunt. ii. p. 237. no. ccxxiv. (1805).

Turdus triurus Vieill. N. Dict. d'Hist. Nat. xx. p. 275 (1818: Paraguay).

Mimus triurus Sharpe, Cat. B. Brit. Mus. vi. p. 342 (1881); Berlepsch, J. f. O. 1887, p. 113 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 317 (Paraguay).

a. ♀ ad. Sapucay, July 31, 1904.

Bill, tarsi, and feet black; iris whitish.

The amount of white on the secondaries appears to vary a great deal. In this particular individual the dark pattern is the predominating colour, while many others in the British Museum have the secondaries nearly pure white.

[This species is rare with us here in Paraguay. I have only seen it about half a dozen times in as many years, and know practically nothing of its habits.—*W. F.*]

Family TURDIDÆ.

177. MERULA ALBICOLLIS PARAGUAYENSIS, subsp. nov.

Turdus albicollis Vieill. N. Dict. d'Hist. Nat. xx. p. 227 (1818: Brazil); Seebohm, Cat. B. Brit. Mus. v. p. 209 (1881); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 618 (1906).

a. ♂ ad. Sapucay, April 19, 1903.
b. ♀ ad. „ May 25, 1903.
c. ♂ ad. „ June 12, 1903.

Bill horn-coloured above, buff below; feet pale horn-coloured; iris pale brown.

d, e. ♂; *f.* ♀ ad. Sapucay, June 1904.

Compared with the series in the collection of the British Museum, I find these examples to differ from the true *M. albicollis* Vieill. in being olive-brown above instead of rufous brown, while the grey band across the throat is paler and narrower, and the white on the middle of the abdomen more extended, imparting a whiter appearance. Bill blackish above, yellow below; tarsi and feet hazel-brown; iris brown. Total length 9·9 inches, culmen 0·9, wing 4·3, tail 3·4, tarsus 1·2.

I propose to separate this race under the name of *M. albicollis paraguayensis*.

[This bird is resident and not uncommon with us. The large forests and the densely wooded hills of the locality afford a perfect home for it. I have nothing to add respecting the habits of these well-known birds. The habits of the four Thrushes which occur with us are so much alike that it is scarcely worth while to separate them in the description—even the nest and eggs cannot be identified, unless the parent bird is shot on the nest.—*W. F.*]

178. MERULA ALBIVENTER.

Turdus albiventer Spix, Av. Bras. i. p. 70, ♂, tab. lxix. fig. 2 (1824: Minas Geraes and Para); Seebohm, Cat. B. Brit. Mus. v. p. 216 (1881); id. Monogr. Turd. i. p. 257, pl. 59 (1898); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 618 (1906); id. Nov. Zool. xv. p. 15 (1908).

Merula albiventer Sharpe, Hand-l. B. iv. p. 125 (1903); Ihering, Revista Mus. Paulista, vi. p. 316 (Paraguay).

Turdus metalophonus Bertoni, Aves Nuev. Paraguay, p. 147.

a. ♀ ad. Sapucay, October 17, 1902.
b. ♀ ad. „ November 30, 1902.

c. ♂ ad. Sapucay, June 11, 1903.
d. ♀ juv. Ybytimi, January 29, 1904.

I have compared these examples with thirty-five others in the National Collection, from Colombia, Guiana, and Brazil, and find that they differ slightly in having the entire upper surface rufous olive-brown, brighter on the wings, while the under parts are slightly more rufous. They do not shew any tendency to the grey on the head, hind-neck, and upper tail-coverts seen in the majority of the series mentioned above. I do not, however, regard these minor details as of specific value, and have followed Dr. Ihering in placing *T. metalophonus* Bertoni, as a synonym of the present species.

Two eggs, collected on October 27, 1903, are bluish-white, blotched and spotted with pale chestnut over the entire surface. In one of the specimens the chestnut is confluent at the larger end. Axis 1·1 inch; diameter 0·75.

179. MERULA RUFIVENTER.

Zorzal obscuro y roxo Azara, Apunt. i. p. 336. no. lxxix. (1802).

Turdus rufiventris Vieill. N. Dict. d'Hist. Nat. xx. p. 226 (1818: Brazil); Berlepsch, J. f. O. 1887, p. 113 (Paraguay); Hellmayr. Abhandl. Akad. Wiss. München, xxii. p. 617 (1906).

Merula rufiventer Sharpe, Hand-l. B. iv. p. 121 (1903); Ihering, Revista Mus. Paulista, vi. p. 316 (Paraguay).

a. ♂ juv. Sapucay, December 25, 1902.
b. ♀ ad. ,, March 26, 1903.

Bill olive-green above, somewhat lighter below, a yellowish stripe along the junction of each mandible; feet pinky horn-coloured; iris brown.

c. ♂ ad. Sapucay, April 1903.

Bill yellowish green; iris warm brown.

d. ♂ ad. Sapucay, March 24, 1904.
e. ♂ ad. ,, May 7, 1904.

Two eggs (October 11, 1903) are pale blue with lilac spots much more thickly at the larger end, where they are formed more or less into a zone: axis 1·2 inch, diam. 0·85. The second egg is paler blue and much more thickly spotted and blotched with chestnut, becoming more dense towards the large end, which is almost entirely covered: axis 1·25 inch, diameter 0·85.

[The best singing bird in Paraguay. Nest firmly constructed of grass and mud, usually built in the fork of a tree at an elevation of from 12 to 18 feet from the ground in dense part of forest; 3–4 eggs in the clutch. The bird leaves the nest when any person is passing, making its discovery easy.

There is no possible way of distinguishing the eggs and nest of this bird from those of *M. leucomelas* or *M. albiventer* other than by shooting the bird on the nest, as their nesting-habits are identical.

This bird is resident and very common, living in the large forests and searching for food on the ground.—*W. F.*]

180. MERULA AMAUROCHALINA.

Turdus amaurochalinus Cab. Mus. Hein. i. p. 5 (1850: Brazil); Berlepsch, J. f. O. 1887, p. 113 (Paraguay); Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 618 (1906).

Merula amaurochalina Sharpe, Hand-l. B. iv. p. 124 (1903).

Turdus leucomelas Seebohm, Cat. B. Brit. Mus. v. p. 213; id. Monogr. Turd. i. p. 235, pl. 53. fig. 1 (1898).

a. ♂ ad.; *b, c, d.* ♀ ad. et imm. Sapucay, April 1903.

e. ♂ imm. Sapucay, May 8, 1903.

Bill yellowish horn-coloured; feet horn-coloured; iris brown.

f. ♂ ad. Sapucay, March 30, 1904.

g, h. ♂; *i.* ♀ ad. Sapucay, April 1904.

Two eggs obtained on December 23, 1902, are pale blue with chestnut-brown spots and blotches, which become confluent at the larger end, and underlying spots of lilac-grey. Axis 1·15 inch; diameter 0·9.

Two eggs taken on October 3, 1903, are pale blue, sparsely spotted and blotched with pale chestnut, more thickly at the larger end, but the spots are not confluent. Axis 1·05–1·1 inch; diameter 0·8.

Family Vireonidæ.

181. Vireo chivi.

Gaviero Azara, Apunt. ii. p. 34. no. clii. (1805).

Sylvia chivi Vieill. N. Dict. d'Hist. Nat. xi. p. 174 (1817: Paraguay).

Vireo chivi Gadow, Cat. B. Brit. Mus. viii. p. 295 (1883); Sharpe, Hand-list B. iv. p. 248 (1903); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay); Hellmayr, Nov. Zool. xv. p. 22 (1909).

Vireosylvia chivi Berlepsch, J. f. O. 1887, pp. 5, 114 (Lambaré); Kerr, Ibis, 1892, p. 123 (Lower Pilcomayo).

a, b. ♀ ad. Sapucay, October 1902.

Iris light brown.

c. ♂ ad. Sapucay, March 29, 1903.

Bill horn-coloured above, pale blue below; tarsi and feet pale blue.

d, e, f. ♀; *g.* ♂ ad. Sapucay, March 1904.
h, i, k. ♂; *l.* ♀ ad. „ August 1904.
m. ♂ ad. Sapucay, September 1, 1904.

These examples appear to be all fully adult, and differ from each other only in the under tail-coverts, which are bright sulphur-yellow in some to almost white in others; the under wing-coverts vary in a similar manner.

The wing-measurements of the males are 2·8–3·0 inches, females 2·7–2·95.

[This species is quite common in wooded districts and has rather a pleasing call, with which different individuals answer one another. It is in this way that specimens of the bird can be most easily procured; its habits of living in the thick parts of the trees, hidden in the foliage, would otherwise make it difficult to find, were it not for its call.—*W. F.*]

182. Cyclorhis wiedi.

Cyclorhis wiedi Pelzeln, Orn. Bras. pp. 74, 137, 138 (1868: Mattogrosso: Paraná); Berlepsch, Ibis, 1888, p. 88; Sharpe, Hand-list B. iv. p. 258 (1903).

Cyclorhis ochrocephala Oberholser, Proc. U.S. Nat. Mus. xxv. p. 140 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

a. ♀ ad. Sapucay, April 21, 1904.
b. ♀ ad. „ June 2, 1904.
c, d. ♂ ad. „ July 1904.
e. ♂ ad. „ August 12, 1904.

Bill pinkish horn-coloured, paler below; tarsi and feet pale slate-blue; iris red.

[Resident and not uncommon in wooded districts; a lively species, not at all concerned when watched, which will let the observer approach closely without flying away. The customs of all these birds are so much alike that it is hard to decide what are peculiar to any one species.—*W. F.*]

183. PACHYSYLVIA PŒCILOTIS.

Hylophilus pœcilotis Temm. Pl. Col. iii. pl. 173. fig. 2 (1823: Brazil); Gadow, Cat. B. Brit. Mus. viii. p. 308 (1883).

Pachysylvia pœcilotis Sharpe, Hand-list B. iv. p. 254 (1903); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

Serpophaga sinnamocephala Bertoni, Aves Nuev. Paraguay, p. 125.

a, b. ♂ ♀ ad. Sapucay, April 1903.
c. ♂ ad. Sapucay, April 30, 1904.

Bill pinky horn-coloured above, grey below; tarsi and feet pale bluish slate-coloured; iris brown.

d. ♀ ad. Sapucay, June 6, 1904.
e, f. ♀ ad. „ July 1904.

Although Temminck's figure is by no means a good representation of the bird, there can be no doubt whatever that it was intended for this species.

The specimens sent by Mr. Foster are absolutely identical with others, in the collection of the British Museum, from South-east Brazil, and we are of opinion that the bird described by Mr. Bertoni belongs to the present species, as is suggested by Dr. Ihering.

[This species is resident but not common throughout the heavily wooded region of Central Paraguay. A quiet shy bird, this may account in a way for its apparent rareness.—*W. F.*]

Family TROGLODYTIDÆ.

184. TROGLODYTES MUSCULUS GUARIXA.

Troglodytes musculus Naum.; Sharpe, Cat. B. Brit. Mus. vi. p. 255 (1881) ; id. Hand-list B. iv. p. 88 (1903) ; Oberholser, Proc. U S. Nat. Mus. xxv. p. 140 (190~~5~~ : Sapucay) ; /3 Ihering, Revista Mus. Paulista, vi. p. 317 (Paraguay).

Troglodytes furvus Berlepsch, J. f. O. 1887, p. 113 (Paraguay).

Troglodytes musculus musculus Oberholser, Proc. U.S. Nat. Mus. xxvii. p. 202 (1904 : Paraguay).

Troglodytes musculus guarixa Hellmayr, Nov. Zool. xv. p. 18 (1908).

a, b. ♂ ad. Sapucay, October 1902.

Iris light brown.

c. ♂ ad. Sapucay, November 22, 1902.
d. ♀ ad. ,, December 10, 1902.
e. ♀ ad. ,, March 4, 1904.

Bill horn-coloured, lower mandible paler; feet light pinkish horn-coloured; iris brown.

Six eggs, collected on October 8, 1903, are pinky white in colour, minutely dotted with a deeper tint, which become much more dense and darker in colour at the larger end, where it forms a zone. Axis 0·7 inch; diameter 0·55.

A second clutch, obtained on November 16, 1903, is similar as regards measurements, but darker in colour, and the markings more evenly distributed over the entire surface.

[Resident and common through the central and southern parts of Paraguay. It nests in any suitable place, but usually in a hole. A favourite material for lining the nest appears to be the scales from the leg of a fowl or the skin of a snake. Two broods are hatched during the breeding-season, and I am of opinion that on some occasions there are three.—*W. F.*]

Family MOTACILLIDÆ.

185. ANTHUS LUTESCENS.

Anthus lutescens Pucheran, Arch. Mus. Paris, vii. p. 343 (1855 : Brazil) ; Hellmayr, Nov. Zool. xiii. p. 307 (1906).

Anthus rufus Sharpe, Cat. B. Brit. Mus. x. p. 606 (1885).

Anthus parvus Berlepsch, J. f. O. 1887, p. 130 (Paraguay).

a. ♀ ad. Sapucay, June 19, 1904.

Bill dark horn-coloured, lower mandible pinkish; iris brown.

Family MNIOTILTIDÆ.

186. BASILEUTERUS LEUCOBLEPHARUS.

Contramaestre Azara, Apunt. ii. p. 40. no. cliii. (1805).

Sylvia leucoblephara Vieill. N. Dict. d'Hist. Nat. xi. p. 206 (1817: Paraguay).

Basileuterus leucoblepharus Sharpe, Cat. B. Brit. Mus. x. p. 400 (1885); Berlepsch, J. f. O. 1887, p. 114 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

Basileuterus leucoblepharus calus Oberholser, Proc. Biol. Soc. Washington, xiv. p. 188 (1901: Sapucay); id. Proc. U.S. Nat. Mus. xxv. p. 141 (1902).

a, b. ♀ ad. Sapucay, October 1902.

Bill black; feet buff; iris light brown.

c. ♂ ad. Sapucay, November 28, 1902.
d, e. ♀ ad. ,, March 1903–04.
f, g, h. ♀; *i.* ♂ ad. Sapucay, April 1903.

Feet pinkish yellow.

k. ♂ ad. Sapucay, May 7, 1904.
l. ♀ ad. ,, June 30, 1904.
m. ♂ ad. ,, August 22, 1904.

[This species is resident and fairly common through the thickly wooded parts of the country, living entirely on the ground. It is a matter-of-fact little bird taking no notice of anyone, busy with its own affairs, and will feed right up to the feet of the observer if he will but remain quiet.—*W. F.*]

187. BASILEUTERUS AURICAPILLUS.

Contramaestre coronado Azara, Apunt. ii. p. 41. no. cliv. (1805).

Setophaga aurocapilla Swains. Anim. in Menag. p. 293 (1837: Brazil).

Basileuterus auricapillus Sharpe, Cat. B. Brit. Mus. x. p. 393; Berlepsch, J. f. O. 1887, p. 114 (Paraguay); Kerr, Ibis, 1892, p. 123 (Rio Pilcomayo); Oberholser, Proc. U.S. Nat. Mus. xxv. p. 141 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

a. ♀ ad. Sapucay, October 10, 1902.
b, c. ♂ ad. „ December 1902.
d, e. ♂ ad. „ February 1904.
f. ♂ ad. „ March 16, 1904.

Bill horn-coloured, lighter below; tarsi and feet yellowish horn-coloured; iris brown.

g. ♀ ad. Sapucay, April 9, 1903.
h, i. ♀ ad. „ July 1904.

I do not observe, in comparing this series of individuals, that they are darker above, but notice that the under surface is brighter and clearer yellow.

Having taken the wing-measurements of the entire series in the collection of the British Museum, I find that the northern form from British Guiana, Trinidad, and Colombia is slightly larger.

[This species is fairly common throughout Paraguay. There is nothing peculiar about its habits.—*W. F.*]

188. Parula pitiayumi.

Pico de punzon celeste de pecho oro Azara, Apunt. i. p. 421. no. cix. (1802).

Sylvia pitiayumi Vieill. N. Dict. d'Hist. Nat. xi. p. 276 (1817: Paraguay).

Parula pitiayumi Sharpe, Cat. B. Brit. Mus. x. p. 259, pl. xi. fig. 1 (1885).

Compsothlypis pitiayumi Berlepsch, J. f. O. 1887, p. 113 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 318 (Paraguay).

Compsothlypis pitiayumi pitiayumi Oberholser, Proc. U.S. Nat. Mus. xxv. p. 143 (1902).

a. ♂ imm. Sapucay, February 3, 1904.
b, c. ♂ ♀ ad. „ March 1903.

Bill black above, yellow below ; feet buff ; iris brown.

d–h. ♀ ad. Sapucay, 1903–04.

Bill horn-coloured above, buff below ; feet yellowish horn-coloured.

i, k. ♂ ad. Sapucay, May 1904.
l. ♂ ad. ,, August 28, 1904.

The female differs from the male chiefly in its slightly smaller size and in the absence of the black on the lores and the ring round the eye.

[This species is resident and can be found in all the forests, even close to Asuncion. It is a pretty little bird, quick and lively in its movements, and by no means shy. I have met with it during most months of the year, but I have never been able to discover its nest. This is not to be wondered at when one looks over the hundreds of square miles of forest ; it seems well-nigh impossible to find any nest at all, particularly one belonging to a not very abundant species.—*W. F.*]

189. GEOTHLYPIS VELATA.

Contramaestre verde pecho de oro Azara, Apunt. ii. p. 54. no. clv. (1805).

Sylvia velata Vieill. Ois. Amér. Sept. ii. p. 22, pl. lxxiv. (1807).

Geothlypis velata Sharpe, Cat. B. Brit. Mus. x. p. 363, pl. ix. fig. 5.

Geothlypis canicapilla (Swains.) ; Berlepsch, J. f. O. 1887, p. 114 (Paraguay).

Geothlypis æquinoctialis velata Oberholser, Proc. U.S. Nat. Mus. xxv. p. 142 (1902).

a, b. ♂ ♀ ad. Sapucay, November 1902.
c, d. ♂ ; *e.* ♀ ad. ,, March 1904.
f, g. ♂ ♀ ad. ,, April 1903.

Bill black above, lighter below ; feet pinky light brown ; iris brown.

h, i, k. ♂ ad. Sapucay, June 1904.
l. ♀ ad. Sapucay, July 1, 1904.

Three eggs; collected on November 13, 1904, have the ground-colour white, dotted and blotched with chestnut-brown, clustered more particularly round the larger end, where it forms an irregular zone; the underlying spots are paler and more of a lilac colour. Measurements: axis 0·7 inch; diameter 0·55.

[Nest built in tangled undergrowth in monte, elevation of about six feet, and constructed of loose soft swamp-grass in a dry state; three eggs in clutch. This species is by no means uncommon. Resident and generally distributed.—*W. F.*]

Family CŒREBIDÆ.

190. DACNIS CAYANA.

Motacilla cayana Linn. Syst. Nat. i. p. 336 (1766: Mexico).

Pico de punzon celeste y negro Azara, Apunt. i. p. 408. no. ciii. (1802).

Dacnis cayana Sclater, Cat. B. Brit. Mus. xi. p. 19 (1886); Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

Dacnis cyanomelas (Gm.); Berlepsch, J. f. O. 1887, p. 114 (Paraguay).

Dacnis cayana cayana Hellmayr, Nov. Zool. xv. p. 26 (1909: Goiaz).

a. ♀ ad. Sapucay, December 2, 1902.

b. ♀ ad. „ March 16, 1904.

c, d, e. ♂; *f, g, h.* ♀ ad. Sapucay, April 1903–04.

Bill horn-coloured; feet pale pinkish horn-coloured; iris ruby-brown.

i. ♂ ad. Sapucay, May 29, 1904.

k–q. ♂ ad. et imm.; *r.* ♀ ad. Sapucay, June 1904.

s. ♂ imm.; *t.* ♀ ad. Sapucay, July 1904.

u, v. ♂ ♀ ad. Sapucay, August 1904.

Having compared this series of ten male specimens with forty-seven others, in the National Collection, from various localities throughout the known range, I have come to the conclusion that the so-called *Dacnis cayana* is divisible into four races or subspecies:—

(1) *D. cayana ultramarina* Lawr., from Eastern Nicaragua to Panama, which is distinguished by its more blue appearance. (2) *D. cayana glaucogularis* Berlepsch & Stolzmann, from Colombia, Ecuador, Peru, and Bolivia, which differs in having more green on the throat. (3) *D. cayana cayana,* from Guiana and Trinidad, which is rather smaller in size, with a somewhat larger black patch on the throat. (4) *D. cayana paraguayensis,* from Paraguay, Matto Grosso, and S.E. Brazil, distinguished by its larger size and large black throat-patch.

The specimens from Chiriqui, whence Mr. Bangs described *D. cayana callaina,* are very similar to *D. cayana glaucogularis* and scarcely to be distinguished from that race.

[Resident and fairly common in the large forests of this district. I have at times met with it on the very edge of the woods. It is very hard to find out anything positive about our Paraguayan wood-birds. The montes are so dense and gloomy that in the first place it is difficult to see them, and then when disturbed a flight of a few yards will take them beyond the vision of the hunter. The woods are so thick and tangled with fallen trees, where the vines bind all together into one almost impassable mass, that it is impossible to follow a bird for any distance, and the mere fact of breaking through the undergrowth would frighten it into silence, while without movement on the part of the birds it is quite hopeless to try and distinguish them in the changing lights and shadows of the forest. The only hope is to remain perfectly motionless, when first one and then another will betray its presence by some movement.—*W. F.*]

191. DACNIS SPECIOSA.

Pico de punzon verde blanco cabeza celeste Azara, Apunt i. p. 416. no. cvi., female (1802).

Pico de punzon azul y blanco azulejo Azara, tom. cit p. 418. no. cvii., young female.

Sylvia speciosa Wied, Beitr. Nat. Bras. iii. p. 708 (1831 : Bahia).

Dacnis speciosa Sclater, Cat. B. Brit. Mus. xi. p. 26; Berlepsch, J. f. O. 1887, p. 114 (Paraguay).

Ateleodacnis speciosa Oberholser, Proc. U.S. Nat. Mus. xxv. p. 140.

a, b. ♂ ad. Sapucay, March 1904.

c, d, e. ♂ ♀ ad. et imm. Sapucay, April 1903.

f, g. ♂ ad.; *h, i.* ♀ ad. ,, July 1904.

k, l. ♂ ♀ ad. Sapucay, August 7, 1904.

Bill black above, paler below at base; tarsi and feet purplish slate-coloured; iris brown.

[A rare but resident bird with us in this district. A pair were shot together in the month of August, so they are probably among the early nesters. They inhabit the large forests and never go on to the open camp. I know nothing of the nesting-habits.—*W. F.*]

Family PROCNIATIDÆ.

192. PROCNIAS VIRIDIS.

Procnias viridis Illig.; Allen, Bull. Amer. Mus. ii. p. 70 (1889); Sharpe, Hand-list B. v. p. 353 (1909).

Procnias cærulea Berlepsch, Ibis, 1881, p. 243; id. J. f. O. 1887, p. 130; Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

Procnias tersa Sclater, Cat. B. Brit. Mus. xi. p. 50 (1886).

Chelidorhamphus orhycterus Bertoni, Aves Nuev. Paraguay, p. 102.

Tersina cærulea Richmond, Proc. U.S. Nat. Mus. xxxv. p. 598 (1908).

a. ♀ ad. Sapucay, November 20, 1902.

Family TANAGRIDÆ.

193. CHLOROPHONIA CHLOROCAPILLA.

Tanagra viridis Vieill. N. Dict. d'Hist. Nat. xxxii. p. 426 (1819: South America).

Chlorophonia viridis Sclater, Cat. B. Brit. Mus. xi. p. 54; Berlepsch, J. f. O. 1887, p. 130 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

Chlorophonia chlorocapilla Oberholser, Proc. U.S. Nat. Mus. xxv. p. 144 (1902).

Chlorophonia viridiceps Sharpe, Hand-list B. v. p. 354 (1909).

a. ♀ imm. Sapucay, February 28, 1904.
b, c, d. ♂ ad. „ June 1904.
e, f. ♀; *g.* ♂ ad. Sapucay, July 1904.
h. ♀ ad. Sapucay, August 1904.
i, k. ♂ ♀ ad. „ September 3, 1904.

♂. Bill black above, grey below; tarsi and feet purplish brown; iris brown.

[Rather a rare bird with us here in Paraguay. I have met with it during the months of February, June, July, August, and September. Since it is met with as early as September and remains as late as February, I should be inclined to consider it resident.—*W. F.*]

194. EUPHONIA SERRIROSTRIS.

Euphonia serrirostris d'Orb. et Lafr. Syn. Av. p. 30 (1837); d'Orb. Voy. Amér. Mérid., Ois. p. 267, pl. xxi. figs. 2, 3 (Santa Cruz, Bolivia).

Euphonia chlorotica (part.) Sclater, Cat. B. Brit. Mus. xi. p 64.

Euphonia chlorotica serrirostris Berlepsch, J. f. O. 1887, p. 6 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

a. ♂ ad. Sapucay, November 16, 1902.

195. EUPHONIA VIOLACEICOLLIS.

Acroleptes violaceicollis Cab. J. f. O. 1865, p. 409 (Brazil).

Euphonia chlorotica (Linn.); Sclater, Cat. B. Brit. Mus. xi. p. 64 (part.).

a. ♂ ad. Sapucay, February 27, 1904.

Bill black above, dark slate-coloured below; tarsi and feet black; iris brown.

b. ♂ imm. Sapucay, March 23, 1904.
c. ♂; *d, e.* ♀ ad. Sapucay, April 8, 1904.
f, g. ♂; *h, i.* ♀ ad. „ July 1904.
k. ♂; *l, m.* ♀ ad. „ August 26, 1904.
n. ♂ ad. Sapucay, September 7, 1904.

This species appears to be new to the avifauna of Paraguay.

[These birds are undoubtedly resident with us, as I have obtained specimens from February to September. They live in the tops of the tallest trees and are hard to shoot, owing to the difficulty of seeing them.—*W. F.*]

196. EUPHONIA VIOLACEA AURANTIICOLLIS.

Tanagra violacea Linn. Syst. Nat. i. p. 314 (1766: Brazil).

Euphonia violacea Sclater, Cat. B. Brit. Mus. xi. p. 74; Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

Euphonia aurantiicollis Bertoni, Aves Nuev. Paraguay, p. 94.

a. ♂ imm. Sapucay, March 22, 1904.
b. ♂ ad. „ April 23, 1903.

Bill black above, dark slaty below; tarsi and feet dark slate-coloured; iris brown.

c. ♂ imm.; *d.* ♀ ad. Sapucay, May 1904.
e–g. ♂; *h, i.* ♀ ad. „ June 1904.
k. ♂ ad. Sapucay, July 29, 1904.
l, m. ♂ ad. „ August 1904.
n. ♀ ad. „ September 12, 1904.

Having compared this series with a large number of both males and females of this bird in the collection of the British Museum, I find that the Paraguay form is slightly larger than that of Guiana (♂, wing 2·4 to 2·6 inches; ♀, 2·4 to 2·55), with less violet colour in the plumage and more bottle-green. I agree, therefore, in the separation of the northern and southern forms as suggested by Mr. C. E. Hellmayr (*cf.* Nov. Zool. xiii. p. 356; xiv. p. 6).

[This bird is also resident. I have met with it during every month from March to September, and it is then too late for migrating. The habits of all the birds of this genus are similar, the fruit of the *Palo blanco* attracting them day after day to the same locality, and in the morning when hungry they are more careless and may be shot. I have never found the nest of a single species of this group, and know nothing about their nesting-habits.—*W. F.*]

197. EUPHONIA PECTORALIS.

Pipra pectoralis Lath. Ind. Orn., Suppl. p. lviii (1801 : Brazil).

Euphonia pectoralis Sclater, Cat. B. Brit. Mus. xi. p. 80; Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

Euphonia berlepschiana Bertoni, Aves Nuev. Paraguay, p. 98.

a. ♀ ad. Sapucay, March 29, 1904.
b, c. ♂ ad. „ July 1904.

Bill black above, grey below, black at tip; tarsi and feet dark slate-coloured; iris brown.

These examples are identical with others in the National Collection from Brazil. I agree, therefore, with Dr. Ihering in uniting *E. berlepschiana* of Bertoni with the present species.

[A very rare bird; one was shot while feeding on the fruit of the *Palo blanco* in July 1904 and another during March of the same year.—*W. F.*]

198. EUPHONIA NIGRICOLLIS.

Lindo azul y oro cabeza celeste Azara, Apunt. i. p. 390. no. xcviii. (1802).

Tanagra nigricollis Vieill. N. Dict. d'Hist. Nat. xxxii. p. 412 (1819).

Euphonia nigricollis Sclater, Cat. B. Brit. Mus. xi. p. 61; Berlepsch, J. f. O. 1887, p. 114 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 319 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, April 1904.
c, d. ♂; *e.* ♀ ad. Sapucay, May 1904.
f. g. ♂; *h, i.* ♀ ad. „ June 1904.

♂. Bill black above, grey below; tarsi and feet purplish slate-coloured; iris brown.

This species appears to me to be divisible into three races—Paraguay form, Ecuador form, and Guiana form. The male examples from Paraguay are of a darker orange-colour on the under surface; *E. nigricollis nigricollis*, the northern or Guiana form, is of a somewhat paler orange-colour below, being intermediate between *E. nigricollis nigricollis* and *E. nigricollis* *pelzelni* of Berlepsch, which latter is the Ecuador race. This may be called *E. nigricollis intermedia.* It should be mentioned, however, that the Guiana form occurs also in Peru.

[Another of our rare birds which I have met with only during April, May, and June.—*W. F.*]

199. PIPRIDEA MELANONOTA.

Pico de punzon azul y canela Azara, Apunt. i. p. 413. no. civ. (1802).

Tanagra melanonota Vieill. N. Dict. d'Hist. Nat. xxxii. p. 407 (1819: Brazil).

Pipridea melanonota Sclater, Cat. B. Brit. Mus. xi. p. 92; Berlepsch, J. f. O. 1887, p. 114 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, April 1903–04.

♂. Bill black above, slate-coloured below; tarsi and feet black; iris brown.

c, d, e. ♂; *f, g.* ♀ ad. Sapucay, June 1904.
h, i. ♂; *k, l.* ♀ ad. ,, July 1904.
m, n, o. ♂; *p.* ♀ ad. ,, August 1904.

There are specimens in the British Museum from Ecuador which are darker on the upper back than *P. melanonota*, and pale buff or cream-coloured on the under surface, instead of cinnamon rufous as in that species. Total length 5·0 inches, culmen 0·5, wing 3·2, tail 2·0, tarsus 0·7. This form appears to be *P. melanonota venezuelensis*, Sclater, Cat. B. Brit. Mus. xi. p. 92 part. (Hellmayr in litt.).

[This species is resident, and owing to its quick flight and loud chiriping can generally be secured, as it so foolishly makes its presence known to all the world. The female is more shy, apparently much scarcer. This bird is only met with in the large forests and never near the edge.—*W. F.*]

200. CALOSPIZA PRETIOSA.

Lindo precioso Azara, Apunt. i. p. 381. no. xcv., ♂ (1802).

Lindo verde frente de canela Azara, tom. cit. p. 388. no. xcvii., ♀.

Callispiza preciosa Cab. Mus. Hein. i. p. 27 (1850: Rio Grande).

Calliste pretiosa Sclater, Cat. B. Brit. Mus. xi. p. 114; Berlepsch, J. f. O. 1887, p. 115 (Paraguay).

Calospiza pretiosa Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a–e. ♂; *f–h.* ♀ ad. Sapucay, June 1904.

i, k. ♂ ad. Sapucay, July 1904.

Bill blackish, paler at base below; tarsi and feet dark brown; iris brown.

[I could not say positively whether this species is resident in Paraguay or not, as I have only met with it during the months of June, July, and August. The male is much more common (or careless) than the female, but the proportion of males to females is very badly balanced. The large forests are the only places in which they can be met with. I have never found the nest.—*W. F.*]

201. CALOSPIZA FLAVA CHLOROPTERA.

Lindo bello Azara, Apunt. i. p. 387. no. xcvi. (1802).

Tanagra chloroptera Vieill. N. Dict. d'Hist. Nat. xxxii. p. 407 (1819: Brazil).

Tanagra formosa Vieill. N. Dict. d'Hist. Nat. xxxii. p. 407 (1819: Paraguay).

Calospiza flava chloroptera Hellmayr, Nov. Zool. xv. p. 27 (1908).

a. ♂ ad. Sapucay, May 4, 1903.

Bill black above, grey below; tarsi and feet dark slate-coloured; iris brown.

b. ♀ ad. Sapucay, June 3, 1904.

c. ♂ ad. „ September 13, 1904.

[A very rare bird indeed; I know nothing positive about it.—*W. F.*]

202. TANAGRA SAYACA.

Tanagra sayaca Linn. Syst. Nat. i. p. 316 (1766: Brazil); Sclater, Cat. B. Brit. Mus. xi. p. 158; Berlepsch, J. f. O. 1887, pp. 6, 115 (Lambaré, nest and eggs); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

Lindo saihobi Azara, Apunt. i. p. 370. no. xcii. (1802).

a, b. ♂ ♀ ad. Sapucay, April 1903–04.

♀. Bill horn-coloured above, slate-coloured below; feet bluish slate-coloured; iris brown. [Shot in a banana plantation.]

c. ♂ ad. Sapucay, July 31, 1904.

Three eggs, collected on October 8, 1903, are greenish white in colour, heavily blotched with brown and with smaller markings of pale lilac. Axis 0·9–1·0 inch; diameter 0·65.

Two eggs, obtained on November 7, 1902, are similar in colour, but not so heavily blotched. Axis 0·8–1·0 inch; diameter 0·65.

Mr. Foster was very strongly of opinion that the specimens enumerated below belonged to a different species from *T. sayaca,* as he found that both forms bred in the same district. It may be, of course, that the bird does not put on the full-plumaged dress until the second year, which would account for its breeding in the so-called immature plumage.

a. ♂ imm. Ybytimi, January 31, 1904.
b. ♀ imm. Sapucay, March 30, 1904.
c, d. ♀ ad. ,, April 18, 20, 1904.
e. ♂ ad. ,, May 8, 1904.
f. ♀ ad. ,, June 24, 1904.
g. ♀ ad. ,, August 30, 1904.

[This bird is resident and generally distributed. Nest firmly constructed of moss and twigs lined with fine grass. Three eggs form a clutch. I am of opinion that the birds pair for life, as the same nesting-place is used year after year; a solitary tree is selected when possible; one brood only is reared in a season.—*W. F.*]

203. PHŒNICOTHRAUPIS RUBICA.

Habia roxiza Azara, Apunt. i. p. 351. no. lxxxv. (1802).

Saltator rubicus Vieill. N. Dict. d'Hist. Nat. xiv. p. 107 (1817: Paraguay.)

Phœnicothraupis rubica Sclater, Cat. B. Brit. Mus. xi. p. 196; Berlepsch, J. f. O. 1887, p. 115 (Paraguay);

Oberholser, Proc. U.S. Nat. Mus. xxv. p. 143 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a, b, c. ♂ ♀ ad. Sapucay, September 26, 1902.

♂. Bill blackish; tarsi and feet pale shining horn-coloured; iris brown.

d. ♂ ad. Sapucay, November 22, 1902.

e. ♂ ad. „ April 1904.

f. ♂ ad. „ May 5, 1904.

g. ♀ ad. „ June 6, 1904.

h, i. ♂; *k, l.* ♀ ad. Sapucay, July 1904.

m–p. ♂ ad. et imm. „ August 1904.

The first plumage of the young male is similar to that of the female, but slightly darker, and the first indication of the sexual difference is seen in the brighter and more orange-coloured feathers of the crest, also in the golden-brown feathers of the chin and throat.

[This species is resident and not uncommon in the large forest. The few notes it utters are loud and distinctive, and serve to make its presence known, as it is not shy. It is solitary except during the breeding-season, when it is met with in pairs.—*W. F.*]

204. Tachyphonus coronatus.

Tordo coronado y negro Azara, Apunt. i. p. 328. no. lxxvii. (1802).

Agelaius coronatus Vieill. Enc. Méth. ii. p. 711 (1822: Paraguay).

Tachyphonus coronatus Sclater, Cat. B. Brit. Mus. xi p. 213.

Tachiphonus coronatus Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a. ♂ ad. Sapucay, October 8, 1902.

b, c. ♂ imm. Sapucay, April 1903.

Bill black, paler below at base; feet black; iris ruby-brown.

d, e. ♂ ♀ ad. Sapucay, May 1903.

f–l. ♂ ♀ ad. „ June 1904.

m. ♂ ad. „ July 2, 1904.

[I have met with this species only during the months of June and July, and therefore cannot say whether it is resident or not. It is generally found along the borders of the forest, where the swampy ground comes close up to the edge.—*W. F.*]

205. TRICHOTHRAUPIS MELANOPS.

Lindo pardo y canela alas y cola negras Azara, Apunt. i. p. 396. no. c., ♀ (1802).

Lindo pardo copete amarillo Azara, tom. cit. p. 398. no. ci., ♂.

Muscicapa melanops Vieill. N. Dict. d'Hist. Nat. xxi. p. 452 (1818: Paraguay).

Tachyphonus quadricolor Vieill. op. cit. xxxii. p. 359 (1819: Brazil).

Trichothraupis quadricolor Sclater, Cat. B. Brit. Mus. xi. p. 220 (1886); Oberholser, Proc. U.S. Nat. Mus. xxv. p. 143 (1902: Sapucay).

Trichothraupis melanops Berlepsch, J. f. O. 1887, p. 115 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a. ♂ ad. Sapucay, October 15, 1902.

b, c. ♂ imm., ♀ ad. Sapucay, March 1903.

Bill and feet bluish slate-coloured; iris brown.

d–m. ♂ ad. et imm.; *n–r.* ♀ ad. Sapucay, April 1903–04.

s–t. ♂ ♀ ad. Sapucay, May 1903.

The young male is similar to the female, but distinguished by the vertical yellow crest, which is obscurely shown compared with that of the adult bird.

[This species is resident and common everywhere, even in the small montes of second growth close to Asuncion—in fact, it appears to be one of the most abundant of our forest-birds. I have met with it in flocks of from six to a dozen individuals.—*W. F.*]

206. PYRRHOCOMA RUFICEPS.

Tachyphonus ruficeps Strickland. Ann. & Mag. Nat. Hist. xiii. p. 419 (1844: Brazil).

Pyrrhocoma ruficeps Salvin, Cat. Strickl. Coll. p. 196 (1882); Sclater, Cat. B. Brit. Mus. xi. p. 222 (1886); Oberholser, Proc. U.S. Nat. Mus. xxv. p. 144 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a–d. ♂ ad. et imm.; *e, f.* ♀ ad. Sapucay, April 1903–04.

♀. Bill black above, cream-coloured below; feet dark slate-coloured; iris brown.

g, h. ad. et imm.; *i.* ♀ ad. Sapucay, May 1904.

k, l. ♂; *m.* ♀ ad. Sapucay, June 1904.

n, o, p, q. ♂ ad. et imm. Sapucay, July 1904.

The young male in its first plumage is like the female, and the first appearance of the male attire is shown by the grey on the abdomen, by a few chestnut-coloured feathers on the throat, and by the appearance of slate-grey on the scapulars.

[Another species which is by no means uncommon in the dense forests of the Central region of Paraguay. I have never met with it in the southern provinces, but here it is quite at home. A quick able bird, its dark plumage would be a good protection if it could only keep quiet for a time, but that seems impossible, and the result is that it can easily be shot.—*W. F.*]

207. Nemosia pileata paraguayensis, subsp. n.

Tanagra pileata Bodd. Tabl. Pl. Enl. p. 45 (1783) [ex d'Aubent. *Tangara à coëffe noire, de Cayenne*, pl. 720. fig. 2, male].

Pico de punzon negro azul y blanco Azara, Apunt. i. p. 414. no. cv., ♂ (1802).

Pico de punzon azul y blanco Azara, tom. cit. p. 423. no. cx., ♀.

Nemosia pileata Sclater, Cat. B. Brit. Mus. xi. p. 223; Berlepsch, J. f. O. 1887, pp. 7, 115 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay).

a. ♀ ad. Sapucay, March 18, 1903.

b. ♂; *c, d.* ♀ ad. Sapucay, April 1903.

♂. Bill black; tarsi and feet orange; iris yellow.

e. ♂ ad. Sapucay, May 2, 1904.

The specimens from Paraguay are similar in colour of plumage to those of *N. pileata* Bodd. from Guiana, but differ in that they are larger in every respect. Total length 5·6 inches, culmen 0·65, wing 3·05, tail 2·0, tarsus 0·75. I propose, therefore, that the Paraguay form be designated *Nemosia pileata paraguayensis.*

[This species is by no means common. I know nothing special about its habits.—*W. F.*]

208. Nemosia fosteri.

Nemosia fosteri Sharpe, Bull. Brit. Orn. Club, xv. p. 96 (1905) ; id. Hand-list B. v. p. 396 (1909).

a–e. ♂ ad. et. imm.; *f–i.* ♀ ad. Sapucay, March 1903–04.

k, l. ♂ ad. et imm.; *m–p.* ♀ ad. Sapucay, April 1903–04.

♂. Bill horn-coloured above, orange below ; tarsi and feet dark slate-coloured ; iris brown.

q. ♂ ad. Sapucay, May 5, 1904.

r. ♂ imm. „ June 20, 1904.

Male. The chief differences which distinguish *Nemosia fosteri* from *N. guira* are the wide yellow superciliary streaks and frontal band, the deeper-coloured chestnut on the upper breast and lower back, and the more yellow abdomen ; the under tail-coverts of the type are tinged with chestnut. Total length 5·2 inches, culmen 0·6, wing 2·75, tail 2·2, tarsus 0·7.

Female. Olive-yellow above, slightly more yellow on the upper tail-coverts; under surface pale yellow, including the under tail-coverts; sides of body and flanks inclining to grey; under wing-coverts white. Total length 5·0 inches, culmen 0·6, wing 2·45, tail 1·95, tarsus 0·7.

Young male in first plumage. Like the female, but brighter; the first appearance of the male dress may be recognised by the tinge of chestnut on the breast and lower back, and also by the mixture of black feathers on the throat.

[This species is not uncommon in the dense forests of the district, its bright yellow body and black head making it very conspicuous. It is a lively and restless bird and not by any means shy. The males and females are fairly well balanced in number, but I have never seen them together.—*W. F.*]

209. ARREMON POLIONOTUS.

Arremon polionotus Bonap. Consp. Av. i. p. 488 (1850: Corrientes); Sclater, Cat. B. Brit. Mus. xi. p. 278; Berlepsch, J. f. O. 1887, p. 115 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay); Hellmayr, Nov. Zool. xiii. p. 311 (1906).

Arremon callistus Oberholser, Proc. Biol. Soc. Washington, xiv. p. 188 (1901: Sapucay); id. Proc. U.S. Nat. Mus. xxv. p. 145 (1902); Sharpe, Hand-list B. v. p. 334 (1909).

Arremon polionotus polionotus Hellmayr, Nov. Zool. xiii. p. 311 (1906: Paraguay).

a. ♀ ad. Sapucay, August 18, 1904.

Bill blackish above, deep orange-red below; tarsi and feet pale brown; iris brown.

According to Mr. Foster, this is a very rare bird at Sapucay.

210. CISSOPIS MAJOR.

Cissopis major Cab. Mus. Hein. i. p. 144 (1851: Brazil); Sclater, Cat. B. Brit. Mus. xi. p. 300; Berlepsch, J. f. O. 1887, p. 130 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 320 (Paraguay); Richmond, Proc. U.S. Nat. Mus. xxxv. p. 594 (1908).

Brachyrhamphus elegans Bertoni, Aves Nuev. Paraguay, p. 46 (1901).

a, b. ♂ ♀ ad. Sapucay, July 21, 1904.

Bill and feet black; iris golden yellow.

The individuals received from Paraguay are quite similar to examples of *Cissopis major* Cabanis. I have, therefore, followed Dr. Ihering and Mr. C. W. Richmond in uniting the *Brachyrhamphus elegans* of Bertoni with the present species.

[A very rare bird with us here. I have only met with it twice during my stay in Paraguay.—*W. F.*]

211. GUIRACA CYANEA.

Loxia cyanea Linn. Syst. Nat. i. p. 303 (1766).

Pico grueso azulejo Azara, Apunt. i. p. 438. no. cxviii. (1802).

Guiraca cyanea Berlepsch, J. f. O. 1887, p. 115 (Paraguay); Sharpe, Cat. B. Brit. Mus. xii. p. 71 (1888).

Cyanocompsa cyanea Ihering, Revista Mus. Paulista, vi. p. 321 (Paraguay).

Cyanocompsa sterea Oberholser, Proc. U.S. Nat. Mus. xxv. p. 146 (1902: Sapucay).

a. ♀ ad. Sapucay, May 30, 1903.

b. ♀ ad. " June 26, 1904.

c, d, e. ♂ ad. et imm.; *f, g.* ♀ ad. Sapucay, July 1904.

h, i. ♂ ad. et imm. Sapucay, August 1904.

Having compared this series with more than forty other individuals of *Guiraca cyanea* in the British Museum, I find the specimens to be identical. There appears to be no evidence, therefore, to support the validity of *Cyanocompsa sterea* Oberholser. The size of the bill is, without doubt, a variable character in this species, as even two of the immature male specimens from Paraguay shew considerable variation from each other, and there are many instances of this kind in the large collection which I have consulted.

[The young males of this species do not change to full adult male plumage until the autumnal moult of the second year after birth. That is to say, the birds are some eighteen months old before assuming the full adult plumage.—*W. F.*]

212. GUIRACA GLAUCOCÆRULEA.

Pico grueso azul Azara, Apunt. i. p. 440. no. cxix. (1802).

Pyrrhula glaucocærulea d'Orb. et Lafr. Syn. Av., Mag. de Zool. 1837, p. 85 (Maldonado); d'Orb. Voy. Amér. Mérid., Ois. pl. 50. fig. 2.

Guiraca glaucocærulea Berlepsch, J. f. O. 1887, p. 115 (Paraguay); Sharpe, Cat. B. Brit. Mus. xii. p. 75.

Cyanoloxias glaucocærulea Oberholser, Proc. U.S. Nat. Mus. xxv. p. 146 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 321 (Paraguay).

a. ♂ ad. Sapucay, September 28, 1902.

b. ♂ imm. Sapucay, March 26, 1903.

Bill black, dark slate-coloured below; feet black; iris brown.

c–h. ♂ ad. et imm.; *i.* ♀ ad. Sapucay, June 1903–04.

k, l, m. ♂ ad. et imm.; *n.* ♀ ad. Sapucay, July 1904.

o. p. ♂; *q.* ♀ ad. Sapucay, August 1904.

r. ♂ ad.; *s.* ♂ imm. Sapucay, September 1904.

Adult female. General colour of the upper parts brown, somewhat paler on the rump and upper tail-coverts; wing-coverts blackish with rufous margins; quills and tail-feathers blackish brown; entire under surface rufous brown, somewhat paler on the throat and middle of abdomen; bill blackish above, pinkish grey below; tarsi and feet very dark brown; iris brown. Total length 5·6 inches, culmen 0·45, wing 2·75, tail 2·4, tarsus 0·8.

[This species, like *G. cyanea*, I have met with during the months May to September. Its habits are also similar, so far as I know at present, and the same remarks about the plumage apply to this bird.—*W. F.*]

213. SPOROPHILA MELANOCEPHALA.

Pico grueso cejita blanca Azara, Apunt. i. p. 418 no. cxxiv. (1802).

Coccothraustes melanocephala Vieill. N. Dict. d'Hist. Nat. xiii. p. 542 (1817: Paraguay).

Spermophila melanocephala Sharpe, Cat. B. Brit. Mus. xii. p. 118; Graham Kerr, Ibis, 1892, p. 125 (Fortin Page).

Sporophila melanocephala melanocephala Hellmayr, Verh. zool.-bot. Ges. Wien, 1904, p. 533.

Sporophila melanocephala Ihering, Revista Mus. Paulista, vi. p. 321 (Paraguay).

a. ♂ ad. Sapucay, June 11, 1904.

Bill and feet dark horn-coloured; iris brown.

b, c. ♀ ad. Sapucay, August 1904.

Bill and feet dark vandyke-brown.

d. ♂ ad. Sapucay, September 6, 1904.

Bill blackish brown; iris brown.

The female is distinguished from the male chiefly by the absence of the black on the head, sides of face, and collar on the fore-neck, also by the absence of the rufous collar on the hind-neck. Total length 4·9 inches, culmen 0·4, wing 2·35, tail 2·1, tarsus 0·65.

[A very rare bird with us, although I have seen one in a cage at Asuncion. It had been caught in the Chaco close to Asuncion, and was offered for sale in the market there. It was purchased by a lady who declined to part with it. I always considered this species as one of our rare birds and was rather keen on acquiring it.—*W. F.*]

214. Sporophila pileata paraguayensis, subsp. nov.

Male. Allied to *S. pileata*, but differs in having the entire upper surface, except the black head, olive-brown or ashy brown instead of pinkish buff, the under parts pearly white including the under wing-coverts and under tail-coverts, instead of rosy buff. Total length 4·2 inches, culmen 0·35, wing 2·15, tail 1·55, tarsus 0·6.

Female. Yellowish brown above, somewhat paler on the rump and upper tail-coverts; under surface ochreous buff; under wing-coverts white. Total length 3·9 inches, culmen 0·3, wing 1·95, tail 1·45, tarsus 0·55.

a. ♂ ad. Sapucay, March 24, 1903.

Bill black; feet black; iris brown.

b. ♀ ad. Sapucay, March 25, 1903.

Upper mandible horn-coloured, lower mandible cream-coloured; feet horn-coloured; iris brown.

c. ♂ imm. Sapucay, March 23, 1904.

Bill black, lower mandible horn-coloured; feet black; iris brown.

215. Sporophila hypoxantha.

Pico grueso pardo y canela Azara, Apunt. i. p. 445. no. cxxii. (1802).

Sporophila hypoxantha Cab. Mus. Hein. i. p. 150, note (1851: Montevideo); Berlepsch, J. f. O. 1887, pp. 7, 115 (Lambaré); Hellmayr, Verh. zool.-bot. Ges. Wien, 1904, p. 527; Ihering, Revista Mus. Paulista, vi. p. 321 (Paraguay).

a. ♂ ad. Sapucay, March 21, 1904.

Bill and feet very dark horn-coloured.

216. Sporophila ruficollis.

Sporophila ruficollis Cab. Mus. Hein. i. p. 150, note, ex Licht. (1850).

Spermophila ruficollis Sharpe, Cat. B. Brit. Mus. xii. p. 140.

a. ♂ imm. Sapucay, March 21, 1904.

Bill horn-coloured, lower mandible lighter; feet black; iris brown.

[Shot in the open camp.—*W. F.*]

218. Sporophila cærulescens.

Pico grueso gargantilla Azara, Apunt. i. p. 452. no. cxxv. (1802).

Pyrrhula cærulescens Vieill. Enc. Méth. iii. p. 1022 (1823: Brazil).

Sporophila cærulescens Berlepsch, J. f. O. 1887, p. 115 (Paraguay).

Spermophila cærulescens Sharpe, Cat. B. Brit. Mus. xii. p. 126.

a, b, c. ♂ ad. et imm. Sapucay, October 1902.
d. ♂ ad. Sapucay, February 2, 1904.
e, f. ♂ ♀ ad. „ March 1903–04.
g. ♀ ad. „ May 4, 1904.
h. ♂ ad. „ June 17, 1904.
i. ♂ ad. „ July 17, 1904.
k. ♂ ad. „ September 1, 1904.

Bill pale grey; feet and toes dark brown; iris brown.

[This species is resident with us, but is by no means common. It is generally to be met with in the scrubby growth along the banks of the small streams flowing through the open camps, where there is an abundance of small seeding plants. It must nest in the matted tufts of grass, as it is always to be found in the open, but I have never met with the nest.—*W. F.*]

219. Chrysomitris icterica.

Gafarron Azara, Apunt. i. p. 483. no. cxxxiv. (1802).

Fringilla icterica Licht. Verz. Doubl. p. 26 (1823: São Paulo, Brazil).

Chrysomitris icterica Berlepsch, J. f. O. 1887, p. 116 (Paraguay); Sharpe, Cat. B. Brit. Mus. xii. p. 217.

Spinus icterica Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

Spinus ictericus campestris Hellmayr, Abhandl. Akad. Wiss. München, xxii. p. 680.

a, b. ♂ ad. Sapucay, July 29, 1904.

Bill, tarsi, and feet blackish; iris brown.

c. ♀ ad. Sapucay, August 18, 1904.

These individuals, which are in fully adult plumage, agree both in measurements and colour of plumage with the series in the National Collection.

[This species is very rare with us here in Paraguay, and I am not acquainted with its habits.—*W. F.*]

220. Sycalis pelzelni.

Chuy Azara, Apunt. i. p. 479. no. cxxxiii. (1802).

Sycalis pelzelni Sclater, Ibis, 1872, p. 42 (Cuyaba); Berlepsch, J. f. O. 1887, pp. 10, 116 (Lambaré); Sharpe, Cat. B. Brit. Mus. xii. p. 380; Oberholser, Proc. U.S. Nat. Mus. xxv. p. 146 (1902: Sapucay); Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a. ♂ ad. Ybytimi, January 31, 1904.

b. ♂ ad. „ February 9, 1904.

c, d, ♂ ad.; *e, f, g.* ♀ ad. Sapucay, June 1904.

♂. Bill, tarsi, and feet light pinky horn-coloured; iris brown.

h. ♂ ad. Sapucay, July 29, 1904.

i, k. ♀; *l.* ♂ ad. Sapucay, August 1904.

m. ♂ ad. Sapucay, September 6, 1904.

The two specimens from Ybytimi obtained in January and February are in very worn plumage, and have evidently just passed through the breeding-season. The collector has sexed them both as males, but I am of opinion that the example obtained in January is a female; he has also marked them both as immature, which must be a mistake, of course.

[This species is resident and fairly common through the open camp lands. It is exclusively a ground-feeder. I have not found the nest yet, as the dense matted grasses, sometimes breast high, form excellent cover for the birds, and their only enemies would be snakes and small ground mammals.—*W. F.*]

221. Myiospiza manimbe.

Manimbé Azara, Apunt. i. p. 525. no. cxli. (1802).

Fringilla manimbe Licht. Verz. Doubl. p. 25 (1823 : Bahia).

Coturniculus manimbe Berlepsch, J. f. O. 1887, pp. 9, 116 (Lambaré).

Ammodromus manimbe Sharpe, Cat. B. Brit. Mus. xii. p. 691.

Myiospiza manimbe Oberholser, Proc. U.S. Nat. Mus. xxv. p. 146 (1902 : Sapucay) ; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay) ; Hellmayr, Nov. Zool. xiii. p. 353 (1906).

a. ♀ ad. Sapucay, November 21, 1902.
b. ♂ ad. ,, December 2, 1902.
c. Juv. ,, February 16, 1904.
d. Juv. ,, March 22, 1904.
e, f. ♂ ad. ,, June 1904.

Bill blackish above, pinky grey below ; tarsi and feet pale horn-coloured ; iris brown.

The young bird in March has blackish spots on the lower throat, breast, and sides of body ; the feathers of the back and wings are black with paler margins.

[The habits of this species are so similar to those of *Brachyspiza pileata*, except that the former nests in the grass and low shrubs more than about houses, that what applies to the one would also serve for the other.—*W. F.*]

222. Brachyspiza pileata.

Emberiza pileata Bodd. Tabl. Pl. Enl. p. 23 (1783).

Chingolo Azara, Apunt. i. p. 492. no. cxxxv. (1802).

Zonotrichia pileata Berlepsch, J. f. O. 1887, pp. 9, 116 (Lambaré) ; Sharpe, Cat. B. Brit. Mus. xii. p. 610.

Brachyspiza capensis capensis Oberholser, Proc. U.S. Nat. Mus. xxv. p. 146 (1902 : Sapucay).

Brachyspiza capensis Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

Brachyspiza pileata Sharpe, Hand-l. B. v. p. 309 (1909).

a. ♂ ad. Sapucay, September 26, 1902.
b. ♀ ad. ,, April 28, 1903.

Bill horn-coloured above, lighter below; feet pinky horn-coloured; iris brown.

c. ♀ ad. Ybytimi, January 31, 1904.
d. ♂ ad. „ February 6, 1904.
e. ♂ ad. Sapucay, June 22, 1904.

Three of these individuals are in full winter plumage, while those from Ybytimi are young birds in their first plumage, being thickly spotted on the breast and sides of body; the grey on the middle and sides of the head in the adult is here replaced by whitish and blackish lines; the chestnut collar on the hind-neck of the adult is absent in the young.

[Neatly constructed nest, lined with horse-hair, in low-grown tree (occasionally but rarely on the ground), elevation about five feet. Male and female both incubate. I shot a male bird once just as it left the nest. Three eggs form a clutch. On one occasion I removed the second egg as soon as it was laid; in this manner the bird was induced to lay four eggs and then the nest was deserted.—*W. F.*]

223. CORYPHOSPIZA ALBIFRONS.

Cola aguda vientre de canela Azara, Apunt. ii. p. 263. no. ccxxxiv. (1805).

Sylvia albifrons Vieill. N. Dict. d'Hist. Nat. xi. p. 276 (1817: Paraguay).

Donacospiza albifrons Berlepsch, J. f. O. 1887, p. 116 (Paraguay).

Coryphospiza albifrons Sharpe, Cat. B. Brit. Mus. xii. p. 766; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a. ♂ ad. Sapucay, October 16, 1902.
b. ♀ ad. „ May 4, 1904.

[This is a very rare bird in the neighbourhood of Sapucay.—*W. F.*]

224. CORYPHOSPINGUS CRISTATUS.

Fringilla cristata Gm. Syst. Nat. i. p. 926 (1788: Cayenne).

Aráguirá Azara, Apunt. i. p. 199. no. cxxxvi. (1802).

Coryphospingus cristatus Berlepsch, J.f.O. 1887, pp. 9, 116 (Lambaré); Sharpe, Cat. B. Brit. Mus. xii. p. 803.

a, b. ♂ ♀ ad. Sapucay, October 1902.
c, d. ♂ ad. „ November 1902.
e, f. ♂ ad. „ December 1902.
g. ♀ imm. Ybytimi, January 29, 1904.
h, i. ♂ ad. Sapucay, April 1904.
k, l. ♂ ♀ ad. „ May 1904.

Three clutches of eggs, obtained in October and November, are pure white in colour, and measure: axis 0·7–0·8 inch; diameter 0·55.

[Male bird very common, female rare and hard to secure. Both incubate, and I fancy the male does most of the work, as it is more often shot on the nest than the female. They must bring out two broods or more, as they are amongst the earliest and latest breeders. The nest is usually built on some low-growing shrub, not more than four feet from the ground; no particular locality is chosen, any place seems to suit.—*W. F.*]

225. HAPLOSPIZA UNICOLOR.

Haplospiza unicolor Cab. Mus. Hein. i. p. 147 (1850: Rio Grande do Sul), ex Licht. Mus. Berol.; Berlepsch & Ihering, Zeitschr. Ges. Orn. ii. p. 123, pl. viii. figs. 1, 2, ♂ ♀ (1885: Rio Grande do Sul); Sharpe, Cat. B. Brit. Mus. xii. p. 626.

a. ♂ imm. Sapucay, July 6, 1904.

This individual, which I imagine to be a young bird, is uniform olive-brown above, the primary-coverts and quills being dark brown with paler edges, the greater coverts also shewing paler margins; under parts similar in colour, but everywhere streaked with whitish; under wing-coverts pale grey; under tail-coverts isabelline grey. Total length 5·0 inches, culmen 0·45, wing 2·45, tail 1·85, tarsus 0·75.

The species is new to the avifauna of Paraguay.

226. POOSPIZA MELANOLEUCA.

Chipiu negro y blanco Azara, Apunt. i. p. 532. no. cxliv. (1802).

Emberiza melanoleuca d'Orb. et Lafr. Syn. Av., Mag. de Zool. 1837, p. 82 (Chiquitos, Bolivia).

Poospiza melanoleuca Berlepsch, J. f. O. 1887, p. 116 (Paraguay); Sharpe, Cat. B. Brit. Mus. xii. p. 638; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a. ♀ ad. Ybytimi, January 29, 1904.

Bill, tarsi, and feet black; iris brown.

[This bird, which is very rare, inhabits open camps.—*W. F.*]

227. POOSPIZA NIGRORUFA.

Chipiu negro y canela Azara, Apunt. i. p. 527. no. cxlii. (1802).

Emberiza nigrorufa Lafr. et d'Orb. Syn. Av., Mag. de Zool. 1837, p. 81 (Paraguay: Sta. Fé Parana).

Pipilo personata Swains. Anim. in Menag. p. 311 (1838: Brazil).

Poospiza nigrorufa (Lafr. et d'Orb.); Berlepsch, J. f. O. 1887, p. 116 (Paraguay).

Poospiza personata Sharpe, Cat. B. Brit. Mus. xii. p. 640; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, June 1904.

c. ♀ ad. Sapucay, August 18, 1904.

On comparing these specimens with the series in the British Museum, I find that the individuals from Uruguay and Lomas de Zamora (seven in number, six of which are males and one female) have longer wings and measure from 2·6 to 2·75 inches; while thirteen others, nine of which are males and four females, from Mendoza, Rio Negro, Patagonia, Punta Lara, Cio Lijan, Conchitas, Belgrano, Ajó, and Paraguay, only measure 2·35 to 2·5 inches.

228. PAROARIA CUCULLATA.

Loxia cucullata Lath. Ind. Orn. i. p. 378 (1790: Brazil).

Crestudo roxo Azara, Apunt. i. p. 461. no. cxxviii. (1802).

Paroaria cucullata Berlepsch, J. f. O. 1887, p. 116 (Paraguay); Sharpe, Cat. B. Brit. Mus. xii. p. 809, pl. xvi. fig. 1; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a, b. ♂ ♀ ad. Sapucay, June 22, 1904.

[This species is rare throughout the wooded parts of the country, becoming more abundant the farther south one goes. The specimens offered for sale as cage-birds in the markets here are generally caught on the chaco in the vicinity of the mouth of the river Pilcomayo.—*W. F.*]

229. EMBERNAGRA PLATENSIS.

Emberiza platensis Gm. Syst. Nat. i. p. 886 (1788 : La Plata).

Habia de bañado Azara, Apunt. i. p. 363. no. xc. (1802).

Embernagra platensis Berlepsch, J. f. O. 1887, pp. 10, 116 (Lambaré) ; Sharpe, Cat. B. Brit. Mus. xii. p. 758 ; Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a. ♀ ad. Sapucay, October 16, 1902.
b. ♀ imm. „ November 17, 1902.
c. ♀ ad. „ March 22, 1903.

Bill black above, reddish orange below; feet pinkish horn-coloured; iris brown.

d. ♂ ad. Sapucay, April 19, 1903.
e. ♂ ad. „ May 23, 1903.

[This bird is resident and in the low swampy grounds fairly common, but seldom to be met with in any other locality. The nest is built in a tuft of grass, but even there the parasitic birds find it out; three eggs usually form a clutch.—*W. F.*]

230. EMBERIZOIDES HERBICOLA.

Cola aguda encuentro amarillo Azara, Apunt. ii. p. 257. no. ccxxx. (1805).

Sylvia herbicola Vieill. N. Dict. d'Hist. Nat. xi. p. 192 (1816 : Paraguay).

Emberizoides sphenurus Berlepsch (nec Vieill.), J. f. O. 1887, p. 116 (Paraguay).

Emberizoides herbicola Sharpe, Cat. B. Brit. Mus. xii. p. 769.

Emberizoides macrourus herbicola Ihering, Revista Mus. Paulista, vi. p. 322 (Paraguay).

a. ♂ ad. Sapucay, November 16, 1902.

b, c. ♂ ad. ,, March 1903.

Bill horn-coloured above, cream-coloured to yellow below at base; feet pale pinkish brown; iris brown.

d. ♂ ad. Sapucay, April 23, 1903.

e, f. ♂ ♀ ad. Sapucay, June 1904.

[Resident and generally distributed, although nowhere common; met with along the edge of swamps and in low camp grounds. Nest placed in thick clumps of matted grass, but is frequently discovered by parasitic birds, as most nests contain one or more of their eggs. Three eggs usually form a clutch.—*W. F.*]

231. PSEUDOLEISTES GUIRAHURO.

Guirahuró Azara, Apunt. i. p. 291. no. lxiv. (1802).

Agelaius guirahuro Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 545 (1819: Paraguay).

Pseudoleistes guirahuro Sclater, Cat. B. Brit. Mus. xi. p. 353 (1886); Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a. ♂ ad. Sapucay, November 23, 1902.

b. ♀ ad. ,, March 27, 1904.

c. ♂ ad. ,, April 27, 1903.

d, e. ♂ ad. ,, May 1903.

[This bird is resident and common, living together in flocks of from ten to thirty individuals, and, next to *Turdus rufiventris*, is one of our best singers. The nest is very difficult to find, owing to the care taken by the bird to conceal it in some swamp, where it is quite hidden under the large masses of grass.—*W. F.*]

232. AGELÆUS RUFICAPILLUS.

Tordo corona de canela Azara, Apunt. i. p. 315. no. lxxii. (1802).

Agelaius ruficapillus Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 536 (1819: Paraguay).

Agelæus ruficapillus Sclater, Cat. B. Brit. Mus. xi. p. 347; Berlepsch, J. f. O. 1887, p. 116 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

Agelæus ruficollis Bertoni, Aves Nuev. Paraguay, p. 81.

a. ♂ imm. Sapucay, April 17, 1903.

The following is a description of the young, and only, example sent:—The feathers of the forehead and crown chestnut; hinder crown and nape more or less mixed with golden buff like the sides of face and ear-coverts; throat as well as the breast and abdomen of a similar colour, but paler and shewing blackish streaks; on the throat a few spots of chestnut, on the breast and sides of the body a few dark blue-black feathers are appearing; vent, thighs, and under tail-coverts blackish brown; feathers of the back and wing-coverts black with brown margins, imparting a scolloped appearance; quills dark brown with paler edgings; tail-feathers black. Bill black above, paler below; tarsi and feet black; iris brown. Total length 6·5 inches, culmen 0·7, wing 3·45, tail 2·35, tarsus 1·15.

233. AGELÆUS CYANOPUS.

Tordo negro y vario Azara, Apunt. p. 313. no. lxxi. (1802).

Agelaius cyanopus Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 552 (1819: Paraguay).

Agelæus cyanopus Sclater, Cat. B. Brit. Mus. xi. p. 344; Berlepsch, J. f. O. 1887, pp. 11, 116 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a. ♂ imm. Sapucay, March 17, 1904.

Male immature. Head and hind-neck black, with olive-brown margins to the feathers; lores, sides of face, and ear-coverts black; mantle, scapulars, and greater coverts black, with dark chestnut edges to the feathers; lesser and median wing-coverts black, margined with olive-brown like the lower back, rump, and upper tail-coverts; primary and secondary quills dark brown with paler edgings; tail-feathers black; under surface fulvous yellow, paler on the vent, and streaked with black, more broadly on the sides of the body; under tail-coverts black, fringed with dull yellow; under wing coverts dull yellow, more or less mixed with black. Bill, tarsi, and feet horn-coloured; iris brown.

234. MOLOTHRUS BONARIENSIS.

Tanagra bonariensis Gm. Syst. Nat. i. p. 898 (1788: Buenos Ayres).

Molothrus bonariensis Sclater, Cat. B. Brit. Mus. xi. p. 325; Berlepsch, J. f. O. 1887, p. 116 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a. ♂ imm. Ybytimi, February 8, 1904.
b. ♂ ad. Sapucay, August 25, 1904.
c, *d*. ♂; *e*. ♀ ad. Sapucay, September 9, 1904.

[Resident and not uncommon throughout Paraguay, but not common enough to teach us anything about its parasitic habits. I believe that it lays in the nest of the Scissor-tail.—*W. F.*]

235. MOLOTHRUS BREVIROSTRIS.

Icterus brevirostris d'Orb. et Lafr. Syn. Av., Mag. de Zool. 1838, ii. p. 7 (Maldonado; Corrientes; Argentina); Berlepsch, J. f. O. 1887, pp. 10, 116 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

Molothrus rufoaxillaris Cassin, Proc. Acad. Nat. Sci. Philad. 1866, p. 23 (Buenos Ayres); Sclater, Cat. B. Brit. Mus. xi. p. 338.

a. ♂ ad. Sapucay, October 25, 1902.
b. ♂ imm. Sapucay, April 30, 1904.
c, *d*, *e*. ♂ ad. Sapucay, June 1903–04.

[Like the preceding species, this is not common enough to enable us to learn anything about its peculiar habits.—*W. F.*]

236. ICTERUS PYRRHOPTERUS.

Tordo negro cobijas de canela Azara, Apunt. i. p. 318. no. lxxiv. (1802).

Agelaius pyrrhopterus Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 543 (1819: Paraguay).

Icterus pyrrhopterus Sclater, Cat. B. Brit. Mus. xi. p. 368; Berlepsch, J. f. O. 1887, pp. 11, 117 (Lambaré); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a, b. ♂ ad. Sapucay, April 1903.
Bill black; feet dark bluish slate-coloured; iris brown.
c. ♂ ad. Sapucay, June 13, 1903.
d. ♀ ad. ,, July 21, 1903.
e. ♀ ad. ,, August 14, 1904.

[This species is resident and not uncommon in the district. It is a forest-loving bird and is very rarely met with in the open except during planting-time, when the newly turned earth evidently attracts the bird in search of insects.—*W. F.*]

237. AAPTUS CHOPI.

Chopi Azara, Apunt. i. p. 282. no. lxii. (1802).

Agelaius chopi Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 537 (1819: Paraguay).

Aphobus chopi Sclater, Cat. B. Brit. Mus. xi. p. 405; Berlepsch, J. f. O. 1887, p. 117 (Paraguay).

Aaptus chopi Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a, b. ♂; *c, d.* ♀ ad. Sapucay, April 1903.
Bill and feet black; iris brown.
e, f. ♂ ad. Sapucay, May 1903.
g. ♂ ad. ,, June 12, 1903.

[This species is common and resident in Paraguay, where it is the special aversion of the agriculturist, owing to the impudence with which it digs up the maize as soon as the leaves shew above the ground. In this way a flock will, in a day or so, utterly destroy a large field of corn, unless it is very carefully watched. The birds are so used to being frightened away that they go only to the edge of the forest. The Paraguayan is too poor to be able to shoot, and well the birds know that no harm can come to them for trespassing, while at times the damage done is considerable; between locusts and Chopis the poor planter has a bad time of it. *Cyanocorax cæruleus* is as impudent and daring as the Chopi, and both are so common that planting is not one of the easiest things imaginable.—*W. F.*]

238. CYANOCORAX CHRYSOPS.

Acahé Azara, Apunt. i. p. 253. no. liii. (1802).

Pica chrysops Vieill. N. Dict. d'Hist. Nat. xxvi. p. 124 (1818: Paraguay).

Cyanocorax chrysops Sharpe, Cat. B. Brit. Mus. iii. p. 120 (1877); Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a. ♀ ad. Sapucay, April 18, 1904.

Eight clutches of eggs, which vary from two to four in number, collected during the month of October, are usually drab-colour with brown spots, more thickly massed at the larger end, where they form a zone; the underlying spots are lead-grey. The measurements vary:—axis 1 15 to 1·4 and diameter 0·85 to 0·95 inch.

[This species is common and resident. It is one of the most impudent of all the birds and the greatest pest to the agriculturist; it will at times follow the native Paraguayan and dig up the grains of maize as soon as they are planted.

The easiest way to secure a number of individuals is to wound one slightly and make it cry out, then all the other birds within a wide area will come to assist their companion, almost attacking the hunter in their anger. The nest is not to be distinguished from that of *C. cæruleus*, but the eggs, although the same in number and size, are differently marked. —*W. F.*]

239. CYANOCORAX CÆRULEUS.

Urraca celeste Azara, Apunt. i. p. 259. no. lv. (1802).

Pica cærulea Vieill. N. Dict. d'Hist. Nat. xxvi. p. 126 (1818: Paraguay).

Cyanocorax cæruleus Sharpe, Cat. B. Brit. Mus. iii. p. 126; Berlepsch, J. f. O. 1887, p. 117 (Paraguay); Ihering, Revista Mus. Paulista, vi. p. 323 (Paraguay).

a. ♀ ad. Sapucay, October 18, 1902.
b. ♂ ad. ,, March 27, 1904.
c. ♂ ad. ,, April 17, 1904.
d, e. ♂; *f.* ♀ ad. Sapucay, May 1903 04.

♂. Bill and feet black; iris brown.

Two eggs, collected on October 11, 1903, are pale blue, blotched with brown and with underlying spots of lilac-grey. Measurements: axis 1·3 inch; diameter 0·85.

Two eggs, collected on October 2, 1903, are similar in ground-colour, but with the brown spots larger and much more pronounced. Axis 1·25–1·35 inch; diameter 0·9.

[This bird is also resident, but not common; it is one of the earliest breeders. The nest is built some fourteen to eighteen feet from the ground in the dense forest. Five eggs are a full clutch.—*W. F.*]

XXIX.—*Remarks on some Birds of Western Australia.*

By Thomas Carter, M.B.O.U.

I propose to make a few remarks upon Mr. Ogilvie-Grant's paper on a collection of Birds from Western Australia which was published in 'The Ibis' for 1909, p. 650, and 1910, p. 156.

I may mention that I take a peculiar interest in this collection, as in 1903 I went to England, intending to stay, and took with me a collection of about five hundred bird-skins from Western Australia. My doctor, however, advised me not to risk remaining in England for the winter, so I offered the collection to the authorities of the British Museum, on their own terms; but it was refused and went to the Tring Museum. In the collection were skins of many species now described as new by Mr. Ogilvie-Grant. The last time I saw the late Dr. Bowdler Sharpe in 1909, almost the last words he said to me, and reiterated, were how much he regretted that they had not taken my collection when it was offered.

1. Corvus coronoides Vig. & Horsf.

The White-eyed Crow is very common from the Gascoyne River to the North-West Cape. Some, shot by me at various dates between December and April, had the irides partly hazel and partly white, in the transition-stage from the hazel of the immature to the white of the adult. On July 18th, 1900, I noted that the irides of an almost fully fledged young bird in the nest were *slate-blue* in colour. As neither of the parent birds was secured, it is possible that the nestling was a *Corvus bennetti*.

Corvus bennetti was recorded by me as occurring at Point Cloates in N.W. Australia, in the 'Emu,' vol. iii. p. 212.

2. ZONÆGINTHUS OCULATUS Quoy & Gaim.

Mr. Shortridge states that the Red-eared Finch does not occur inland, but I found it plentiful at Balbarrup in the south-west, a distance of thirty-five miles from the nearest coast in February 1910.

3. ACANTHOCHÆRA CARUNCULATA (Lath.).

Mr. Shortridge remarks that the Red Wattle-bird "is rare in the coastal district of the extreme south-west, where its place is taken by *Anellobia lunulata*." I have found the Red Wattle-bird plentiful from Albany to the Vasse River all along the south-west coast, in the very months when Mr. Shortridge found it to be rare.

4. MELIORNIS LONGIROSTRIS (Gould).

The Long-billed Honey-eater occurs very plentifully round Broome Hill, which is about eighty-five miles inland. Beverley, where Mr. Shortridge found it "not common," is about seventy miles inland.

5. MELIORNIS MYSTACALIS Gould.

Meliornis mystacalis Mathews, Handlist, p. 98.

Mr. Shortridge, who collected a remarkably good series of birds from the various localities that he visited, has missed this handsome species, which occurs near Albany. I also secured specimens of it at Perth and near Broome Hill.

6. PTILOTIS ORNATA Gould.

Mr. Shortridge remarks that the Graceful Honey-eater was not observed in "the *coastal* district to the south of

Brookton." The township of Brookton is about twenty miles south of Beverley, and is about seventy-five miles from the coast, Beverley being about seventy. Yet when speaking of *Meliornis longirostris* he writes : "It occurs as far inland as Beverley."

The Graceful Honey-eater is one of the commonest species round Broome Hill (which is about a hundred and twenty miles south of Brookton), certainly by far the commonest of the Honey-eaters. It also occurs plentifully forty miles south of Broome Hill, and is to be found wherever the White Gum (*Eucalyptus redunca*) grows.

7. PTILOTIS SONORA Gould.

This Honey-eater occurs plentifully, as far, at least, as the North-West Cape, which is nearly three hundred miles further north than the Gascoyne River (see 'Emu,' vol. iii. p. 93).

8. CERTHIONYX OCCIDENTALIS Grant.

Certhionyx occidentalis Grant, Ibis, 1909, p. 658.

Without having seen the single skin upon which Mr. Ogilvie-Grant has founded this new species, it appears to me that he has separated it from *C. variegatus* on very slight grounds. The skin from the North-West Cape referred to by Mr. Ogilvie-Grant as that of "A. G. Campbell" was collected by me. Mr. Shortridge found the last-named species to be rare round Carnarvon. In my notes on "Birds occurring in the Region of the North-West Cape" ('Emu,' vol. iii. p. 92) it is mentioned by me (under the name of *Entomophila leucomela*) as being one of the commonest winter visitors on the coast and inland, appearing as soon as the winter rains commence. Perhaps it was a dry season when Mr. Shortridge was on the Gascoyne River (for which Carnarvon is the post-town).

9. GLYCYPHILA SUBOCULARIS Gould.

Neither Dr. Hartert nor Mr. A. J. North recognise this as a good species. The Brown Honey-eater (*Glycyphila ocularis*) occurs regularly at Broome Hill (eighty-five miles inland). Mr. Shortridge states that *G. subocularis* does not extend inland.

10. Acanthorhynchus superciliosus (Gould).

Mr. Shortridge's field-note states that "The Western Spine-billed Honey-eater was observed as far north as Beverley and Perth, but it *did not extend inland*" [my italics], yet he speaks of *Meliornis longirostris* and other species as occurring as far inland as Beverley. Anyone not well posted up in West Australian geography must be puzzled as to whether Beverley is on the coast or inland.

11. Pardalotus punctatus (Shaw & Nodd.).

I have observed and shot specimens of the Spotted Diamond bird in "Marlock" scrub, fully eighty miles from the coast.

12. Zosterops gouldi (Bonap.).

The range of the Green-backed White-eye extends to Point Cloates and most probably further north ('Emu,' vol. iii. p. 91).

13. Zosterops shortridgii Grant.

Zosterops shortridgii Grant, Ibis, 1909, p. 663.

Mr. Ogilvie-Grant describes this new species also from a single specimen, not very much material upon which to work in such a difficult genus as *Zosterops*. Possibly he was under the impression that it is an insular form, but this it cannot be, as Rabbit Island, where the bird was obtained, is only separated from the mainland by a channel about two hundred yards in width, broken into three by two rocky islets, so that a bird of very weak flying power could easily cross it. Rabbit Island (called "Mistaken Island" on some maps) is about a hundred and fifty acres in area. I thoroughly searched it in March last, being on it all day, and to my disappointment never saw a *Zosterops*: the only land-birds observed were *Halcyon sanctus*, *Acanthiza apicalis*, and *Eopsaltria georgiana*. The bird described as new by Mr. Ogilvie-Grant must have come from the mainland,

and if it is a distinct species it appears remarkable that Mr. Shortridge did not procure more specimens when he was camped at Big Grove (apparently for some time), as that locality is on the mainland and barely three miles from Rabbit Island. I myself have collected along the mainland coast opposite Rabbit Island on many occasions.

14. ZOSTEROPS BALSTONI Grant.

Zosterops balstoni Grant, Ibis, 1909, p. 663.

The pair of skins referred to by Mr. Ogilvie-Grant as "procured at North-West Cape, *A. G. Campbell*," were shot by me, and apparently the bird I mentioned as *Z. lutea* ('Emu,' vol. iii. p. 91) was Balston's White-eye. This species usually occurs in the mangroves, but in the winter months flocks of considerable size leave their shelter and feed on the scrubby coast sand-hills and more open country. In February 1900, a male bird shot in the mangroves near the North-West Cape was apparently breeding there. Probably the nest and eggs, described in the 'Victorian Naturalist,' vol. xviii. p. 31, as those of *Zosterops lutea* are referable to *Z. balstoni* ('Emu,' vol. ii. p. 49).

15. CLIMACTERIS WELLSI Grant.

Climacteris wellsi Grant, Ibis, 1909, p. 664.

Although Tree-Creepers were never observed near Point Cloates—there being no timber within a radius of thirty miles, and very little there—I found an egg sixty miles inland (south-east) from that place, which, being unknown to me, was forwarded to Mr. A. J. Campbell for identification. He replied that there was no doubt that it was that of a Tree-Creeper, and asked me what species occurred in the locality. The egg was placed in a small hollow in a stunted tree about four feet from the ground, and seemed to have been forsaken on account of rain-water having entered and lodged in the nest. There is little doubt that it was an egg of *C. wellsi*.

16. NEOSITTA PILEATA (Gould).

The Black-capped Tree-Runner was seen and secured by me on several occasions about forty miles inland from Point

Cloates in stunted timber ('Emu,' vol. iii. p. 91). This extends its range about two hundred miles north of Mr. Shortridge's observations.

17. PACHYCEPHALA GILBERTI Gould.

Pachycephala gilberti Math. Hand-l. p. 86.

Gilbert's Thickhead is an interesting species which occurs rather numerously about this district, but apparently did not come under Mr. Shortridge's notice. It is, however, a bird that may easily be overlooked, unless attention is attracted by its loud and peculiar notes.

18. GYMNORHINA LEUCONOTA Gray.

Mr. Ogilvie-Grant ascribes the "Magpies" procured by Mr. Shortridge in the South-west and Central inland districts to *G. leuconota*, thereby differing in opinion from such sound naturalists as Campbell, Hall, and Milligan, who have studied the question of the West Australian Magpies closely. There is no doubt a great deal yet to be learnt respecting the various stages of plumages.

19. ARTAMUS PERSONATUS Gould.

Mr. Shortridge says the appearance of the Masked Wood-Swallow in the south-west is very uncertain. My experience of this species, both in the north-west and south-west, is that it is usually seen during spells of dry hot weather with an east wind.

20. ARTAMUS CINEREUS Vieill.

Artamus cinereus Math. Hand-l. p. 84.

It seems curious that the Grey-breasted Wood-Swallow, the most typical West Australian form of this genus, was not noted by Mr. Shortridge. It occurs in the Gascoyne and north-west districts in great numbers, usually in the winter months, when it breeds freely.

21. STIPITURUS MALACURUS (Shaw).

The Emu-Wren does not always reside in swampy flats, as I have seen and shot specimens on the dry open sand plain to the east of both Busselton and Broome Hill.

22. Malurus splendens (Quoy & Gaim.).

Mr. Shortridge "did not meet with this species in Albany," although it is fairly plentiful around that district. I should say that it is considerably more numerous than *M. elegans*. It is not uncommon in the Broome Hill district and still further to the eastward.

23. Malurus leucopterus Quoy & Gaim.

I agree with Mr. North and Mr. Ogilvie-Grant that it is doubtful whether this species and *M. leuconotus* are distinct. When residing at Point Cloates, where *M. leucopterus* was plentiful, I found birds that might have been ascribed to *M. leuconotus*. The appearance of more or less white depends a good deal upon the making of a skin.

24. Malurus bernieri Grant.

Malurus bernieri Grant, Ibis, 1909, p. 676, pl. ix. fig. 2.

Mr. Ogilvie-Grant remarks that it is curious that two skins of this new species, procured in June and July, were in summer plumage. Perhaps they are late breeders. I saw the young of *M. leucopterus* still in the nest on December 8th, 1898 at the North-West Cape, and the young of *M. splendens* in the nest at Busselton, early in January 1888.

25. Malurus pulcherrimus Gould.

On August the 28th, 1908, I shot two females and a male of the Blue-breasted "Wren" near Broome Hill which were still partly in summer plumage, when the bulk of birds here were in "full-breeding" plumage.

26. Sericornis maculata Gould.

The Spotted Scrub-Wren occurs on the Pallenings River at a spot fully ninety miles inland. Mr. Shortridge says "it does not extend its range far inland." I have specimens that vary considerably in the colour and markings of the under parts.

27. Sericornis balstoni Grant.

Sericornis balstoni Grant, Ibis, 1909, p. 677, pl. ix. fig. 1.

In his description of this new species Mr. Ogilvie-Grant has not stated in what particulars it mainly differs from

S. maculata. It would be difficult to distinguish between the two species by merely reading his description of *S. balstoni* and that of Mr. A. J. North's *S. maculata.*

28. Acanthiza uropygialis Gould.

Mr. Shortridge states: "The Chestnut-rumped Tit is the only species that occurs so far north as the Gascoyne River, where, however, it is rare." I found it not uncommon in the scrub inland from Point Cloates, two hundred miles further north ('Emu,' vol. iii. p. 37).

29. Rhipidura tricolor (Vieill.).

The Black-and-White Fantail *does* occur at Albany, but it is very seldom seen there. Mr. Shortridge says it "does not occur."

30. Smicrornis brevirostris Gould.

Mr. Shortridge says that the Short-tailed Tree-Tit occurs as far south as Wagin. It is not uncommon round Broome Hill, forty-four miles further south.

31. Petrœca campbelli Sharpe.

Both *Petrœca campbelli* and *P. goodenorii* are found in the Broome Hill district. *P. goodenorii* occurs regularly in the winter months right down to the beach from Carnarvon to the N.W. Cape.

32. Halcyon sanctus Vig. & Horsf.

Mr. Shortridge says that "the Sacred Kingfisher is said to occur as far north as Houtmans Abrolhos." I have shot specimens at Point Cloates, and it occurs all through West Australia within a certain radius of the coast (see 'Emu,' vol. ii. p. 50).

33. Dacelo cervina Gould.

Mr. Shortridge says "the Fawn-breasted Kingfisher was plentiful on the Gascoyne River and extended *as far north as Murchison.*" The Gascoyne River is from a hundred and fifty to two hundred miles to *the north* of the Murchison River, running roughly parallel to it.

34. Melopsittacus undulatus Shaw.

Mr. Shortridge states that "the Warbling Grass-Parakeet is never found in the extreme south-west." In 1907 and 1908 there were great numbers of these birds breeding round Broome Hill, which is certainly within the S.W. corner.

35. BARNARDIUS SEMITORQUATUS.

Mr. Ogilvie-Grant states that both this species and *B. zonarius* occur at Beverley, and so they do at Broome Hill, where intermediate forms have caused me much perplexity. A large series of skins from various localities is required to form a definite conclusion respecting them. Observing the changes of plumage in caged birds would also be of great assistance.

36. PLATYCERCUS XANTHOGENYS Salvad.

It is exceedingly interesting to have this species confirmed from a definite locality. I have not seen Dr. Hartert's description of the specimens in the Tring Museum, and have often wondered why none had been obtained around Broome Hill, which is situated between Beaufort River and Cranbrook. *P. icterotis* is very common in that district, and I have observed many birds with feathers on the back margined broadly with red, and still more so on the rump and upper tail-coverts. Mr. Ogilvie-Grant surmises that Beaufort and Cranbrook are in West Australia. Good maps of this Colony can be secured gratis, on application to the Agent-General in Victoria Street, and a little study of them would have proved that his surmise is correct. The Beaufort River is a little to the south and west of Wagin, and is a tributary of the Blackwood River. Cranbrook is a township on the Great Southern Railway, eighty miles south of Wagin and seventy miles north of Albany.

37. CACATUA GYMNOPIS Sclater.

Mr. Ogilvie-Grant says that the occurrence of this species in the western division of West Australia shews a considerable extension of its range. It was known to occur in the interior of Queensland, New South Wales, and South Australia, and *possibly* in North-western Australia. Apparently Mr. Ogilvie-Grant is not well posted in the literature of West Australia or he would not have supposed that his is the first record of the occurrence of the Bare-eyed Cockatoo in this State. It is *the* common Cockatoo of the North-west, and was recorded as occurring there twenty-three years ago : see Proc. Roy. Soc. Vict. vol. iii. p. 4 (*Campbell*) ; 'Emu,' vol. i. p. 25 (*Campbell*) ; 'Emu,' vol. iii. p. 171 (*Carter*) ; 'Emu,' vol. ii. p. 62 (*Hall*) ; 'Hall's Key,' p. 62: 'Emu,' vol. iv. p. 38 (*Kilgour*); Nov. Zool. xii. p. 211 (*Hartert*). Rather curiously Mr. Mathews in his 'Handlist' has not given West Australia as one of the States where it occurs. *C. gymnopis* seems to be very close to *C. sanguinea.*

38. CIRCUS ASSIMILIS Jard. & Selby.

Mr. Shortridge says : "The Allied Harrier is probably less numerous than *C. gouldi* in the south-west." If it occurs at all in the south-west it must be very rarely, as I have never yet seen one in that part, but I found that it was plentiful in the north-west ('Emu,' iii. p. 31).

39. PLOTUS NOVÆ-HOLLANDIÆ Gould.

The Darter is certainly seldom seen in the west or south-west districts. During my twenty-four years' residence in West Australia only two occurrences have come under my notice, one at Point Cloates, the other on the Pallenup River in the extreme south.

40. NETTION GIBBERIFRONS S. Müll.

It seems very curious that there is still so much doubt as to whether *Nettion gibberifrons* and *N. castaneum* are two distinct species or not. My experience is that *N. gibberifrons* is a freshwater Duck. I have seen great numbers both in the north-west and south-west, as it is a common species, and, if the green head and neck are ever assumed, the birds must breed freely in immature plumage. I have seen scores of birds on swamps and pools around which were many nests, and have shot many male birds, undoubtedly breeding, that had no trace of a green head or neck, but have seen only one place where *N. castaneum* occurs, namely, in a mangrove creek (sea-water) near the North-West Cape many miles from any fresh water, where there were usually numbers of this handsome Duck. On one occasion I shot and skinned a young male that had no green on the head and neck, but had the rich chocolate-brown on the breast, and I shot and dissected an undoubted female that had a most pronounced glossy green head and neck and red-brown breast. In my paper "Exploration of North-West Cape," 'Emu,' ii. p. 81, line 13, the word *not* was unfortunately printed instead of *most*, through a printer's error.

41. EUPODOTIS AUSTRALIS (J. E. Gray).

Mr. Shortridge states that "the Australian Bustard is less abundant in the S.W. and does not extend to the coast." It certainly occurs regularly within a mile or two of the coast from a few miles north of the Swan River to the N.W. Cape. At Point Cloates I have often seen it on the beach.

42. BURHINUS GRALLARIUS (Lath.).

Mr. Shortridge states that "the Southern Stone-Plover is known as the '*wheelo*' among the colonists." They usually call it a Curlew. According to my experience, "*wheelo*" is the aboriginal name. Most probably the Stone-Plover that Mr. Shortridge saw about Carnarvon and Bernier Island was *Orthorhamphus magnirostris*.

43. ORTHORHAMPHUS MAGNIROSTRIS Vieill.

This species occurred and bred regularly about the North-West Cape, but I never observed it south of Point Cloates. It would be interesting to record it outside the Tropics.

44. ZONIFER TRICOLOR (Vieill.).

Mr. Shortridge says "the Black-breasted Plover is a regular migrant round '*Cape*' York." Probably he means the town of York, which is about forty-five miles east of Perth in West Australia. It is a "far cry" from there to Cape York (roughly about 2200 miles).

45. HÆMATOPUS LONGIROSTRIS Vieill.

Mr. Shortridge remarks that this species appeared to be "a less robust bird than *H. fuliginosus*, as it was rarely found on the windward side of the island" (Bernier Island). I have never been on this island, but the windward (west) side is most probably rocky, and *H. fuliginosus* is not infrequently seen on a rocky coast, whereas *H. longirostris* seems to prefer a sandy beach (see 'Emu,' vol. iii. p. 175). Last March I watched a pair of Sooty Oyster-catchers busily feeding on the south side of Rabbit Island (near Albany) which is almost all rocky ground.

46. Œstrelata macroptera Smith.

Mr. Shortridge was fortunate in meeting with this species breeding on Rabbit Island, as I believe that it has not previously been recorded in West Australia. When I was on this island all the numerous nesting-burrows of Little Penguins were empty, the eggs having been robbed or the young having left the nests.

47. Podicipes novæ-hollandiæ Steph.

This is a regular breeder at Broome Hill, there being a nest every year on nearly all my stock-tanks. Mr. Shortridge says that it is an uncertain visitor.

48. Puffinus carneipes Gould.

This appears to be the commonest species of Petrel breeding on the neighbouring island of Brealesea ($5\frac{1}{2}$ miles distant), whence I have procured birds and eggs.

49. Synœcus sordidus Gould.

The Brown or Swamp Quail occurs rather commonly round Albany, but this species seems to have escaped the keen observation of Mr. Shortridge.

In conclusion, I may say that in a paper of such importance as this the geographical part should, in my opinion, have been made as accurate as possible, while the localities mentioned should have been clearly and simply defined. How many readers are aware that the first ten places mentioned on Mr. Ogilvie-Grant's list are within a radius of twelve miles from Albany? The whole list of localities would have been more conveniently arranged for reference if they had been bracketed under the four heads of, say, Albany, Beverley, Inland Central, and Gascoyne.

XXX.—*On Birds from the Northern Portion of the Malay Peninsula, including the Islands of Langkawi and Terutau; with Notes on other rare Malayan Species from the Southern Districts.* By HERBERT C. ROBINSON, C.M.Z.S., M.B.O.U., Director of Museums, Federated Malay States, and CECIL BODEN KLOSS, F.Z.S., M.B.O.U., Curator, Perak State Museum.

(Plate X. and Text-fig. 6.)

THE collections of which an account is given in the present paper have in the main been obtained during the past two years in the northern portion of the peninsula, in part by ourselves and Mr. Seimund, and in part by native collectors attached to the Museums of the Federated Malay States, our ordinary duties not permitting any very continuous periods of field-work.

In view of the fact that no connected account has ever appeared of the birds of the districts in which we collected, we have thought it of interest to prepare a full list of all species obtained by us, specimens of which are preserved either in the Selangor and Perak Museums or, in a considerable number of cases, in the Natural History Museum, South Kensington.

In some few instances, on account of the special interest attaching to them, birds are mentioned which have not, as yet, been met with in the area covered by the present paper, but to these no serial number is attached.

It will be seen that the list contains some 270 species only, but it will probably be found ultimately that some four hundred or more are represented in the area treated of.

Our own collections were formed in very circumscribed localities, while our collectors were only in the country for between two and three months, and for various reasons did not spend more than a very small proportion of this period at any elevation on the hills, which were found to be singularly unproductive. Several species, therefore, obtained by other collectors in adjacent districts, or which might reasonably be expected to occur, have not as yet been procured, though it is hoped that a projected expedition to the hills of Lakon will shortly explore the only promising district on the map of the peninsula which is still a *terra incognita* to the ornithologist.

Though, as mentioned above, the northern Malay Peninsula is but slightly represented in ornithological literature, collections of very considerable magnitude have been made within its limits; but, with one exception, no connected account of any of them has as yet appeared. It was not therefore to be expected that any actual novelties would be procured, and, as a matter of fact, the only new form described by us is a species of *Myiophoneus*, somewhat closely allied to those occurring both to the north and south of it.

The earliest specimens obtained from this area are probably those of Cantor, which passed with the collections of the Indian Museum to the Natural History Museum at South Kensington. In the middle of the last century, however, before the importance of locality was recognised, Cantor, like other naturalists, paid but little attention to the exact places of origin of his specimens, and as a result many of his acquisitions, now assigned to "Penang," where he was stationed, were certainly not obtained on that island, but were probably derived from native correspondents or hunters who secured them in the adjacent native states of Perlis and Kedah.

About 1876 Allan Hume turned his attention to the Malay Peninsula, and in the course of the succeeding five years accumulated an enormous mass of material throughout the entire length of the western Malay Peninsula, from the Tenasserim border to Singapore. The work was carried out by Davison and Darling, assisted by a considerable staff of natives, and so thoroughly did they accomplish it that to this day hardly a single species has been secured within the area covered by them which they had not also obtained. In their day the *Pax Britannica* was hardly an accomplished fact in the Peninsula, and they were therefore unable to penetrate into the more inland districts or to the mountains of the interior, whereas these localities have yielded a considerable crop of novelties to later explorers, of whom

Mr. Leonard Wray, the first Curator of the Perak Museum, deserves special mention.

In 1882 a paper was published on the Ornis of the Island of Salanga, also known as Tongka or Junk Zeylon, which must not be confused with the State of Selangor in the south of the Peninsula. This paper, which added little to our knowledge and contains numerous incorrect identifications, is duly mentioned in the synonymy.

From 1882 onwards the northern Malay Peninsula was left severely alone by the ornithologist until 1896, when the native State of Trang was visited by the famous American collector and naturalist, Dr. W. L. Abbott, of Philadelphia.

Dr. Abbott spent some considerable time in Trang during the years 1896 and 1897 and also in 1899, and in addition to forming a collection of mammals, which was the starting-point of the reinvestigation of that section of the Malayan fauna from a modern standpoint, he got together a series of over three thousand bird-skins. A few species have been described from this magnificent collection by Dr. C. W. Richmond and other specimens have been mentioned, but it is extremely unfortunate that no full account of it has as yet appeared, as, from information kindly supplied to us by Dr. Richmond, it is evident that it contains material of very great interest, including examples of several species not hitherto recorded from the Peninsular area.

It was largely with a view to securing examples of species which we knew Dr. Abbott had obtained in Trang, but which were desiderata to the local collections, that we decided to work that State, which had remained unvisited by a collector since 1900, though in 1902 Dr. Annandale passed through it from the eastern side and noted a few interesting birds, notably the Wood-Duck, *Asarcornis leucoptera*.

The following papers deal directly with that district, but, except in a few instances, we have not quoted them, but have confined the synonymy to a reference to the 'Catalogue of Birds' and to a recent paper by one of us which is quoted throughout as " Robinson " :—

HUME.—A first tentative List of the Birds of the Western Half of the Malay Peninsula. Stray Feathers, viii. pp. 37, 72, 151–163 (1879); *id. op. cit.* ix. pp. ? 103–133 (1880).

MÜLLER.—Die Ornis der Insel Salanga. Journal für Ornithologie, 1882, pp. 353–448.

RICHMOND.—Description of Three new Birds from Lower Siam: *Æthopyga anomala, Criniger sordidus, Turdinulus granti.* Proc. U.S. Nat. Mus. xxii. pp. 319–321 (1900).

RICHMOND.—Description of Two new Birds from Trang, Lower Siam: *Stachyris chrysops, Oreocincla horsfieldi affinis.* Proc. Biol. Soc. Washington, pp. 157, 158 (1902).

ROBINSON.—The Birds at present known from the Mountains of the Malay Peninsula. Journ. Fed. Malay States Mus. ii. pp. 164–222 (1909).

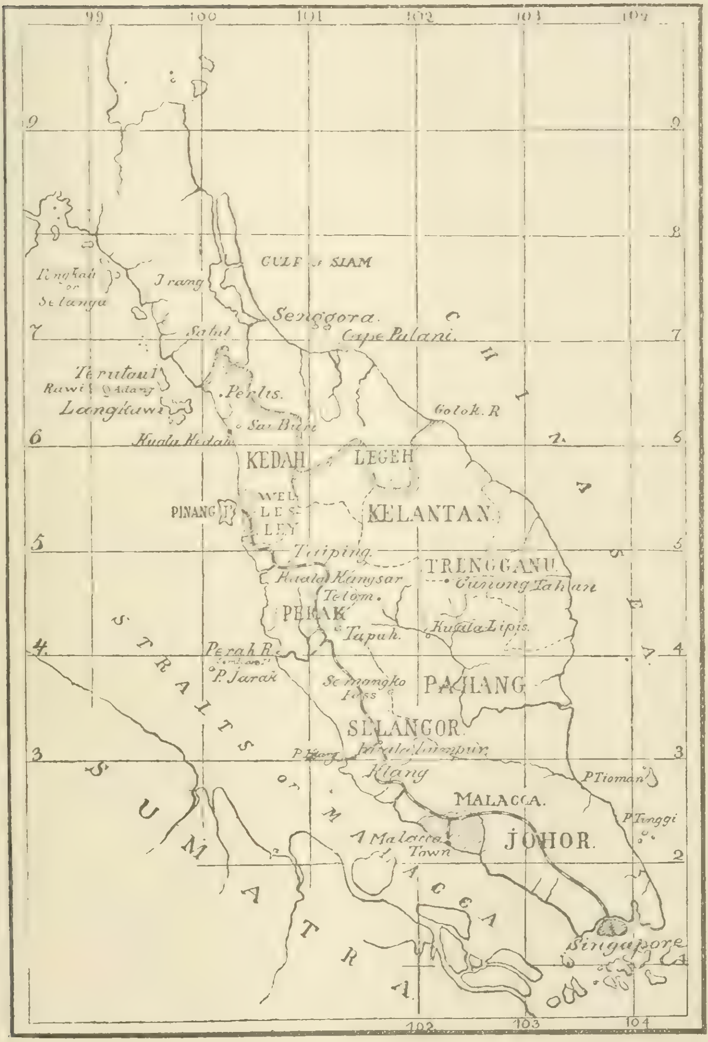
With very few exceptions the birds with which this paper deals were all obtained on the western side of the Malay Peninsula, southwards from the State of Trang, to the mouth of the Kedah River in the State of the same name, about thirty miles north of Penang, and including the islands of Pulau Langkawi and Terutau about seventy-five miles north of Penang and seven or eight miles west of the peninsular coast. We have given a brief account of the general characters of each collecting-station, which may be of interest as explaining the type of fauna met with, and have added the dates at which we visited each station, the season in the north of the peninsula being a much more important factor in the distribution of the bird-population than it appears to be in the central and southern sections.

As many of the places mentioned are hardly to be found on any ordinary atlas, the Editors have kindly allowed us to supply an outline map of the Peninsula (text-fig. 6, p. 663), indicating the majority of the States and the general natural and political features of the country, the latter of which have been much modified by the Anglo-Siamese treaty of 1909.

Starting from the south the first locality from which we have obtained specimens dealt with in the present paper is *Kuala Kedah*, the mouth of the Kedah River, the word "Kuala" being the Malay for the mouth of a river or, equally, for the confluence of two streams.

This locality was visited by Mr. Seimund and myself

Text-fig. 6.


99
100
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104
9
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2
GULF of SIAM
CHINA SEA
Tengkah or Setanga
Trang
Senggora
Cape Patani
Satul
Terutau
Rawi
Adang
Langkawi
Perlis
Sai Buri
Kuala Kedah
Golok R
KEDAH
LEGEH
PINANG
WELLESLEY
KELANTAN
Taiping
TRENGGANU
Kuala Kangsar
Gunong Tahan
Telom
PERAK
Tapah
Kuala Lipis
Perak R.
Sembilan
P. Jarak
Semangko Pass
PAHANG
SELANGOR
P. Klang
Kuala Lumpur
Klang
STRAITS OF MALACCA
P Tioman
MALACCA
P Tinggi
Malacca Town
JOHOR
SUMATRA
Singapore

Sketch-map of the Malay Peninsula.

towards the end of November 1907, on our way to Alor Stah, the capital of the State, which is situated some few miles upstream. The river here flows through flat and highly cultivated country, and embouches on a very shallow sea—so shallow that vessels drawing more than ten or eleven feet of water cannot enter the river at any state of the tide.

The shore on each side of the river-mouth is fringed by very extensive mud-flats, which were frequented at the time of our visit by considerable numbers of shore-birds of several species. Mr. Seimund obtained a considerable number which are noted in the systematic list, but amongst those not secured were observed Pelicans, probably *Pelecanus philippinensis*, the Smaller Adjutant (*Leptoptilus javanicus*), the White Ibis (*Ibis melanocephala*), and the exceedingly rare *Pseudotantalus cinereus*, which we have come across on several occasions all along the peninsular coast, but of which we have succeeded in obtaining only one specimen.

Pulau Paya.—This island is one of a small group a few miles south of Langkawi, between that island and Kuala Kedah. We landed on it for a few hours in December 1907. It is of small size, of no great elevation, and is covered with the usual low jungle. We obtained nothing of any interest on it, only the inevitable Koel (*Eudynamis honorata*) and the Drongo Cuckoo (*Surniculus lugubris*).

Pulau Langkawi, which we visited for a few days in November and December 1907, and on which our collectors spent more than a month at the commencement of 1909, is a large island with a maximum length east and west of about twenty miles and a breadth of about ten in a north-and-south direction. The coast is, however, much indented, and there are innumerable off-lying islands ranging in size from the merest rock to one, like Pulau Dayang Bunting, some ten or twelve miles in extent.

The island is extremely rugged in character, though in the neighbourhood of the two principal villages, Kwah and Kuala Malacca, there are considerable areas of flat land devoted to orchards and to the growing of rice. There is also a good deal of cultivation on the north coast, which we did not ourselves visit, but where our collectors stopped for some time. Elsewhere the country is very mountainous, the highest hill, Gunong Raya, rising to nearly three thousand feet, while there is a range of precipitous mountains in the north-west corner well over two thousand feet.

The geological formation is in the main limestone, though schists and probably granites occur. In many places the rocks come sheer down into the water and are much undercut by the waves, forming small caves and recesses overhung by the most luxuriant vegetation. The flora of the island is very peculiar and markedly different from that of the more southern parts of the Peninsula and is extremely rich in orchids, among which may be mentioned a very beautiful Cypripedium, snow-white in colour (*Cypripedium niveum*). A handsome yellow Balsam (*Impatiens mirabilis*) is also met with here.

Being separated from the mainland by a strait only some ten miles in breadth, which nowhere exceeds ten fathoms in depth, neither Langkawi nor Terutau harbour any peculiar species of birds, though a Hawk (*Spizaëtus nipalensis*) was obtained which has not as yet occurred on the adjacent mainland. The mammals, however, shew a slight amount of differentiation from the continental forms and have therefore attained the honour of names of their own. Of these the most interesting perhaps is a small Pig (*Sus jubatulus* Miller), which is very abundant and causes much damage to the rice-fields and plantations.

One of the most famous features of the Langkawi group is a lake of fresh water some forty or fifty feet deep, which is found on one of the smaller islands to the south-west. It is an almost circular piece of water perhaps a quarter or a third of a mile in diameter, lying in a cup-shaped hollow at the top of a small hill, and probably owes its origin to the subsidence of the roof of one of the caves with which the limestone formation is always honeycombed. The water is of a translucent milky-blue, contrasting well with the deep green of the jungle by which the lake is surrounded, and making a scene of extreme beauty, which is worth travelling far to see. The floor of the lake must be some considerable height above sea-level, at least forty or fifty feet, but we had no means of ascertaining this with any exactitude. The lake is said to be inhabited by a white crocodile, which is, however, of benignant disposition and does not attack human beings.

Terutau lies north of Langkawi, from which it is separated by a channel about four miles in minimum breadth. In area it is considerably smaller than Langkawi, being roughly about sixteen miles long by about four in maximum breadth, the longer axis running north and south. Its surface is extraordinarily rugged and there is little or no cultivation on it, and but few permanent inhabitants, the majority being merely fishermen, who visit the island for the six months' calm season and live in one or two sheltered bays on the east coast.

The west coast, exposed as it is to the full force of the S.W. monsoon, is quite uninhabited. At the south end of the island the coast is sandy and fringed with Sheoaks or Casuarinas, but on the east, where the sheltered waters permit the growth of mangroves, it is muddy, while the west is almost sheer rock. Like Langkawi, Terutau is mostly clothed with thick jungle to the summit of the highest hills, which are slightly lower than those of the first-mentioned island, but on the east side there is a small extent of open ground which is pastured by buffaloes brought over from the mainland. They are now almost feral. We stopped at the south end at Telok Udang, or Prawn Point, for a day or two in December 1907, and also for a few days at a small but excellent anchorage on the east side marked on the charts as "Wanderer Bay." Our collectors also stopped at the same localities for nearly a month in March 1909.

The birds of Terutau are identical with those of Langkawi, but the mammals are slightly different, the larger Mouse Deer, as is very often the case with the insular forms, especially presenting a marked change in coloration, while the common Palm-Squirrel is also distinct. In addition the island boasts of several Rats, a peculiar Porcupine, and a large Flying-Squirrel which we were not so fortunate as to obtain, though we secured examples of a new species of another genus of the latter group.

At the time of our visit both islands were under the suzerainty of Siam, Langkawi belonging to the vassal State of Kedah, while Terutau was under Setul. The inhabitants of Langkawi were almost exclusively Malay, while those of Terutau were mainly Siamese, or rather Sam-sams, a mixed race of Malay and Siamese origin, speaking the latter language. Both islands are visited during certain seasons by the Orang Laut, or Sea Gypsies, a people akin to, if not identical with, the Selungs of the Mergui Archipelago, who frequent the coast as far north as those islands. These people, however, are more commonly found on the Butang Group, which lies about twenty miles to seaward of Terutau and is otherwise uninhabited. We were not so fortunate during the brief time at our disposal as to meet with any of these interesting folk.

Since the date of our visit Langkawi, as part of Kedah, has passed under the protection of Great Britain by the Anglo-Siamese treaty of 1909, while Terutau, as an island frequented by Siamese-speaking people, still remains an intrinsic part of the Siamese dominions.

We left Penang for Trang on November 25th in a small and crazy Chinese steamer, much overloaded with material for the railway now under construction from the port of Trang across the Peninsula to join the main line from Singapore to Bangkok, as provided by the Anglo-Siamese Treaty. After a brief stop at two small ports in the State of Perlis, Lunghu and Sungei Opis, which are mainly concerned with the shipment of pepper, we arrived at the mouth of the Trang River about 5 P.M. on November 26th. The navigation along this coast is exceedingly intricate, no charts being at present in existence, and within the last few months several wrecks have taken place, sunken rocks and shoals being very numerous. The scenery is extremely picturesque, as the course lies through an archipelago of lofty limestone islands of strange outline, covered with rich vegetation and fringed with white coral beaches. Arrived at the river's mouth, we promptly stuck on the bar, but as the tide was rising soon got off and proceeded up the river in the dusk. We arrived at the wharf in the dark, while the rain, which had been falling more or less ever since we had left Penang, settled down into a regular downpour. By some misunderstanding, the Siamese official who had been detailed to await our arrival was not in attendance, and it was some considerable time before we could find a roof to cover us, and then only owing to the kindness of the resident Railway Engineer, Mr. Knight, into whose house we burst somewhat unceremoniously.

Kantan, as the port of Trang is called, is a place of recent origin and owes its existence entirely to the fact that it is the furthest point up the Trang River which can be reached by the coastal steamers, and that it has, therefore, been selected as the Siamese official headquarters. At present it consists merely of the residences of the Governor and other officials and the various government offices, but in the near future it is destined to be a place of considerable importance, as the terminus of a railway which will shorten the distance between Europe and Bangkok by four or five days. The country round is, from the cursory view we had of it, uninteresting, consisting mainly of rice-fields and plains of coarse grass, with here and there low hills covered with secondary jungle.

Next day we interviewed the Governor's deputy and received numerous documents in Siamese, armed with which we started off up stream in a steam launch, even more crazy and ancient than the coaster that had brought us from Penang. After about three hours' laboured progress, partly up river and partly through canals cut across the bends, we arrived at a collection of huts and shops at the termination of a road. Here we transferred ourselves into gharries, and our belongings and servants into bullock-and-buffalo carts, and rattled off along a very fair road through the town of Tap-tien and for about three miles on the other side to a park or botanical garden, the property of the Governor, in which was a large house built some years ago for the accommodation of the King of Siam. There was also a very comfortable wicker rest-house, in which, after some argument with the guardians, we installed ourselves.

It had been raining hard ever since we arrived in the State, and it continued to rain for the next three days, much to our disgust, as we had nothing to do but watch the waters rise steadily in the rice-fields, rendering it quite impossible for us to travel on to our destination in the interior. The country round being covered with highly cultivated rice-fields, pepper-gardens, or orchard-land, was most uninviting, and yielded nothing of interest, though the common birds were different from those found in similar situations in Perak and Selangor. The Governor of the State, who had been apprised of our intended visit from Bangkok, but who was absent at the time of our arrival, returned to meet us, but the floods were so high that his motor-car had to be wheeled along the road by a squad of forty coolies. When he turned up, however, he proved most courteous and obliging, putting his country-house at Chong, our destination, at our disposal, and assigning another very comfortable house for the use of our collectors.

We eventually arrived at Chong, distant twelve or fourteen miles from Tap-tien, along a road which had been originally excellent but was now much damaged by the floods. It passed through very extensive padi-fields, in which much of the rice had been drowned out and would have to be replanted, and through pepper plantations and orchards, but as the road approached Chong we arrived at more undulating land, largely covered with secondary jungle. There were precipitous limestone hills in the distance, while to the north and south appeared hills of more considerable elevation up to 3000 or 4000 feet in height, forming the main dividing-range of the Peninsula or spurs of that range.

Chong itself, is a country-seat of the High Commissioner of the Monthon Puket and his subordinate, the Governor of Trang, who is his nephew. There is a large and comfortable plank house here which had been recently occupied by the Crown Prince of Siam. It was painted in broad vertical stripes of red and white, presenting a somewhat bizarre appearance. It was situated on a small hill in the centre of a large park, originally jungle, from which all the undergrowth had been removed, leaving only the larger forest trees, while the hill on which the house itself stood was terraced. The grounds were maintained in excellent order by a gang of short-sentence convicts, on whom imprisonment did not appear to press very hardly.

This park proved an excellent collecting-ground for birds, especially for Bulbuls, Honeysuckers, and Flowerpeckers, which seemed to concentrate on the isolated trees growing there; so that they could be easily shot, and, what was more important, could be retrieved with much greater ease than in heavy jungle. Game, too, was abundant in the vicinity, and on one occasion a Kyang (*Cervulus muntjac*) strolled across the lawn with a pack of convicts in hot pursuit.

Hard by is one of the most famous waterfalls of the Peninsula, the Trang River falling over a broad shelf of rock for a perpendicular distance of about forty feet. The fall is not vertical, and the scene embowered in heavy jungle on both sides is one of extreme beauty.

Chong is actually at the foot of the main range, and a walk of six or seven miles along the road, excellently engineered but now largely destroyed by heavy rains and landslips, leads to the summit of the pass, which cannot exceed four or five hundred feet, dividing the State of Trang from the East Coast State of Patelung. The road at the summit passes through a narrow defile, which is guarded by a heavy loopholed timber fence and gate. A long day's journey brings the traveller to the Lower Patelung, and to the Inland Sea, but the route, which we have not as yet traversed, has been described by Annandale.

During our stay at Chong we ascended a mountain in the vicinity probably about 3000 feet in height, and obtained an excellent view of the higher mountains of Lakon to the north, which are over 5000 feet and as yet entirely unexplored. The hill we visited was, however, very unproductive in birds and yielded only one of any interest, viz. *Stachyris davisoni*.

After our departure from Chong our collectors visited several localities in the N.E. portion of the State towards Lakon, but for various reasons were unable to ascend any of the hills. They obtained a considerable number of birds, but devoted themselves chiefly to mammals, of which they procured some very interesting specimens, including a new and very large species of Hog Badger (*Arctonyx dictator*), a white Leaf-Monkey, and a large series of a stump-tailed Macaque, which will not improbably prove to be new to science.

In conclusion, we must express our gratitude to the Siamese authorities, both in Bangkok and Trang, for permission to collect, and for facilities in the way of transport and permission to use the Government rest-houses, and more especially to the Governor of Trang and the District Officer of Chong.

Our thanks are also due to H.E. Sir John Anderson, G.C.M.G., High Commissioner of the Federated Malay States, who kindly obtained for us the requisite permission from the Siamese authorities, and to Sir William Taylor, K.C.M.G., Resident General, Federated Malay States, and Mr. E. W. Birch, C.M.G., Resident of Perak, for permission to travel outside the limits of our respective districts.

List of Species.

PHASIANIDÆ.

1. CALOPERDIX OCULEA.

Caloperdix oculea (Temm.); Grant, Cat. Birds Brit. Mus. xxii. p. 222 (1893).

This Jungle-Partridge is extremely rare in collections, and a female from Lam-ra, in the interior of Trang, is the only specimen that appears to have been obtained in the Peninsula during the last twenty-five years, with the exception of some collected by Dr. Abbott, also in Trang, which are now in the United States National Museum.

Practically nothing is known of the habits of the bird, except that it is an inhabitant of low-country jungle. It is evidently commoner in South Tenasserim and the north of the Malay Peninsula than it is in the south, as there are no examples of the species in the museums of Taiping, Kuala Lumpur, and Singapore.

2. PAVO MUTICUS.

Pavo muticus Linn.; Grant, tom. cit. p. 371.

The collection includes three Peacocks from the interior of Trang.

The distribution of the Peacock in the Malay Peninsula is very curious. In suitable localities it appears to be common on both sides of the northern portion of the Malay Peninsula as far south as Kedah on the coast of the west side, and to extend down the Perak River nearly as far as Kuala Kangsar, the native capital of the State of Perak. With the exception of one dubious record from the borders of Selangor and the Negri Sembilan, it is not known with certainty from any other portion of the western slope of the Peninsula, for we regard the locality "Malacca" attached to specimens in the British Museum as entirely indefinite. On the eastern side the Peacock extends further south, and is known with certainty throughout Pahang, and probably occurs in North-eastern Johor in the Endau River basin.

In the Malay Peninsula these birds are not particularly shy, for they are hardly ever interfered with. Their favourite haunts are the courses of the larger rivers, and in the early morning they are often to be seen on the sand-banks of the Pahang River, while they lie up for the heat of the day in the thick vegetation that borders its banks and roost at night in the lofty trees.

3. GALLUS BANKIVA.

Gallus gallus Linn.; Grant, tom. cit. p. 344.

Jungle-fowl were evidently fairly common in Trang on the little jungle-clad hills rising from the rice-fields, whence our men obtained several specimens. Most of the southern Malayan Jungle-fowl have the lower half of the ear-lappet whitish, but in these specimens the lappet is entirely red.

TRERONIDÆ.

[SPHENOCERCUS SEIMUNDI. (Plate X.)

Sphenocercus sp., Robinson, Journ. Fed. Malay States Mus. ii. p. 168 (1909).

Sphenocercus seimundi Robinson, Bull. B. O. C. xxv. p. 98 (1910).

This handsome Green Pigeon is very distinct from any species hitherto described, being most closely allied to *S. oxyurus* (Temm.) from the mountains of Sumatra, with which it agrees in having the bare space round the eye extending to the base of the bill. This character does not occur in any other member of the genus except in *S. apicicauda*, these two being also the only species that have sharply pointed tail-feathers.

From *S. oxyurus* the present form differs in having the wing-coverts edged with yellow, from *S. apicicauda* by its less acuminate tail-feathers, much darker coloration, and the presence of maroon shoulder-patches in the male, and from both species by its yellow and green, not cinnamon or chestnut, under tail-coverts. From *S. robinsoni* Grant, the other Peninsula species, it is at once separated by its pointed tail and naked lores, and from every species of the genus by its pure white belly.

Since the description of this fine species three more specimens, two adult males and a female, have been collected by our Dyaks in the same locality as the type, Semangko Pass, Selangor Pahang-border, about 2700 ft., where we have frequently seen the bird, but under conditions that generally rendered it impossible to obtain it.]

4 BUTRERON CAPELLII.

Butreron capellei (Temm.); Salvad. Cat. Birds Brit. Mus. xxi. p. 32 (1893); Robinson, p. 168.

Lay Song Hong, Interior of Trang, January 1910.

This large Green Pigeon, though fairly common in the Peninsula, is not so well known as the species of *Osmotreron*, and does not afford the same amount of sport. It occurs in the interior of the country, nearly always in very high forest, and feeds on very lofty trees, so that it is generally rather difficult to get.

It is usually met with in very large flocks, and on one occasion, near Selama in North Perak, we came across one that at the lowest estimate must have numbered two or three hundred individuals.

5. TRERON NIPALENSIS.

Treron nipalensis (Hodgs.); Salvad. tom. cit. p. 34; Robinson, p. 169.

Fairly common everywhere, though less so than *Osmotreron vernans* and *O. olax*, and not forming flights to the same extent as those species. Numerous in Trang and also in Terutau.

6. OSMOTRERON BICINCTA.

Osmotreron bicincta (Jerd.); Salvad. tom. cit. p 57.

Exceedingly rare in the Peninsula, though sporadically distributed, being recorded from Salanga (Tongkah), Kuala Selangor, and Malacca. In Trang a single specimen was obtained by our collectors.

The single bird we ourselves obtained was shot out of a flock of *O. vernans* at Kuala Selangor on the Selangor coast in December 1904.

7. OSMOTRERON VERNANS.

Osmotreron vernans (Linn.); Salvad. tom. cit. p. 60.

This, the commonest Green Pigeon in the Peninsula, is found everywhere throughout the country except in thick jungle and on the mountains.

8. MYRISTICIVORA BICOLOR.

Myristicivora bicolor (Scop.); Salvad. tom. cit. p. 227.

The White Nutmeg-Pigeon, the *rawa* of the Malays, like the other species of the genus, is rarely found except on small islands or among the mangroves in the immediate vicinity of the coast. On the small islands in the Straits of Malacca, notably Pulau Jarak, and on others on the east coast of Pahang, it is extremely common and affords very good sport, though for the table the bird is usually tough and tasteless. It was met with, though sparingly, on some of the outlying islands of the Langkawi group in February 1909.

COLUMBIDÆ.

9. COLUMBA PUNICEA.

Columba punicea (Blyth); Salvad. tom. cit. p. 306.

A female specimen obtained on the hills of Pulau Terutau is the most southerly record for this species, which has not hitherto been found south of the island of Tongkah or Salanga, whence there are three specimens collected by Darling in the British Museum.

10. TURTUR TIGRINUS.

Turtur tigrinus (Temm. & Knip); Salvad. tom. cit. p. 440.

Exceedingly common in open spaces throughout the Peninsula, but perhaps rather more abundant in the north, where there is a greater extent of suitable country.

11. CHALCOPHAPS INDICA.

Chalcophaps indica (Linn.); Salvad. tom. cit. p. 514.

Another bird which is exceedingly numerous in all jungle except that of the swampy coastal tract, ascending the mountains to over 5000 feet.

The "apunai tana," as it is called by the Malays, is much trapped with the aid of a bamboo call-pipe, and is sometimes brought into the towns in large numbers for sale as food.

CALŒNAS NICOBARICA.

Calœnas nicobarica (Linn.); Salvad. tom. cit. p. 615.

The Nicobar Pigeon is a migratory bird in the Straits of Malacca, and is apparently found on several islands, but only during the winter months.

We obtained specimens on Pulau Jarak in December 1904. Seimund met with it, though he failed to secure specimens, on Pulau Rumbia, one of the Sembilan Islands, in March 1909, and one of us spent a long and sultry afternoon stalking an old cock bird on a small but very steep islet in Wanderer Bay, Terutau, in December 1907. The old fellow was so wary that we only caught an occasional glimpse of his white tail, and never got a shot at him.

The species is probably found on Pulau Pisang, between Malacca and Singapore, but no specimens have been actually obtained from there, though we have had accounts of a wonderful "merpati mas" or "golden pigeon," which has been killed by flying into the lighthouse.

[To be continued.]

XXXI.—*On a Collection of Birds made by Mr. A. B. Percival in British East Africa.* By D. A. Bannerman, B.A., M.B.O.U. *With Field-Notes* by the Collector.

(Plate XI.)

The present paper is based on a collection of birds which was formed by Mr. Arthur Blayney Percival (Game-Ranger to the Protectorate) in British East Africa, during the years 1900–1903, and presented to the British Museum. The collection, though a small one, is of special interest from the fact that it was chiefly made in the coastal districts, whence comparatively few specimens have hitherto been received. A few birds were also obtained at various points along the railway between Mombasa and Nairobi, and in the neighbourhood of Mount Kilimanjaro; likewise some at Shimoni, Takaungu, and Malindi: the three last-named are places situated on the coast-line, Malindi being some fifty miles north of Mombasa. Unfortunately, Mr. Percival obtained only a small series of each species, and it is to be regretted that in many instances the sex was not determined.

Only one species—a Bulbul (*Chlorocichla percivali*)—proved to be new in Mr. Percival's collection, and this has already been described by Dr. Neumann; but several rare birds, not previously represented in the Natural History Museum, are also included. Among the more interesting species may be mentioned *Pytelia nitidula*, which is here figured for the first time from specimens in Mr. F. J. Jackson's collection; the curious Golden Pipit, *Tmetothylacus tenellus*, of which Mr. Percival obtained a small series; *Macrosphenus kretschmeri*, hitherto unrepresented in the National Collection; and the extremely rare Fan-tailed Warbler, *Cisticola pictipennis*, from the Kikuyu Forest.

In the following itinerary will be found a list of the localities visited by Mr. Percival, with the months in which the birds were collected:—

Mombasa.	Coast of British East Africa.	Aug., Sept., Oct. (1900); May (1903).
Takaungu.	,, ,, ,,	Nov., Dec. (1900); Jan., Feb., March, April (1901).
Tanganiko.	,, ,, ,,	Feb. (1901).
Malindi.	,, ,, ,,	Feb., March (1901).
Umtondea.	,, ,, ,,	March (1901).
Shimoni.	,, ,, ,,	May, June (1901).
Lake Naivasha.	British East Africa.	Nov. (1901).
Lake Njiri.	,, ,, ,,	Jan. (1902).
Tsavo Swamp.	,, ,, ,,	Feb. (1902).
Kikuyu Forest.	,, ,, ,,	March, April, May, June, July (1902).
Nairobi.	,, ,, ,,	April, May, June (1902).
Mt. Kilimanjaro.	German East Africa.	Jan., Feb., March (1902).
M'buguni.	,, ,, ,,	Feb. (1902).

Throughout this paper I have quoted Dr. Reichenow's work 'Die Vögel Afrikas' as "Reich." and Captain Shelley's 'Birds of Africa' as "Shelley, B. of A."

Where Mr. Percival has supplied field-notes I have placed them in square brackets and appended his initials.

My most grateful thanks are due to Mr. W. R. Ogilvie-Grant, for his invaluable help and advice, and also to his attendant, Mr. Wells, for the many services which he has rendered me.

1. PHOLIDAUGES VERREAUXI (Finsch & Hartl.).

Cinnyricinclus verreauxi Reich. ii. p. 680.

a. Imm. Mombasa. (No. 37.)

[Common on the mainland. The males were outnumbered by the females by four or five to one. Up country it was rare.—*A. B. P.*]

2. LAMPROCOLIUS CHALYBEUS (Hempr. & Ehr.).

Lamprocolius chalybeus Reich. ii. p. 687.

a. Ad. Nairobi. (No. 246 *a.*)

3. BUPHAGA ERYTHRORHYNCHA (Stanl.).

Buphagus erythrorhynchus Reich. ii. p. 667.

a. ♂. Mombasa, 31st Aug., 1900. (No. 9.)

[This Ox-pecker was not very common on the coast. It is very injurious to cattle and donkeys, as it rips up sores and old wounds.—*A. B. P.*]

4. Buchanga assimilis (Bechst.).
Dicrurus afer (Licht.); Reich. ii. p. 646.
a. ♂. Tsavo Swamp, 15th Feb., 1902. (No. 245.)

5. Oriolus rolleti Salvad.
Oriolus larvatus rolleti Reich. ii. p. 659.
a. Ad. Takaungu, Feb. 1901. (No. 130.)

6. Vidua hypocherina Verr.
Vidua hypocherina Reich. iii. p. 216.
a. [♂.] Mt. Kilimanjaro, 18th Jan., 1902.

This specimen is almost in adult plumage, but it still retains a few brown feathers on the mantle and back.

7. Vidua principalis (Linn.).
Vidua serena (Linn.); Reich. iii. p. 217.
a ♂. Takaungu.
b. Jr. Nairobi, 28th May, 1902. (No. 281.)

The specimen obtained at Nairobi is of particular interest as it is in the uniform brown plumage of the young bird. It is the only example in this state in the Natural History Museum.

8. Drepanoplectes jacksoni Sharpe.
Drepanoplectes jacksoni Reich. iii. p. 143.
a, b. ♂. Nairobi, 24th and 28th May, 1902. (Nos. 286, 287.)

[During the breeding-season the male of this species performs a peculiar nuptial dance, leaping about a foot into the air and dropping back to the ground with the wings and tail raised. Time after time this performance is repeated until the grass is broken down in a circle, only a tuft being left in the middle.—*A. B. P.*]

9. Urobrachya zanzibarica Shelley.
Urobrachya zanzibarica Shelley, B. of A. iv. p. 64 (1905).
a. ♂. Takaungu, 1st Dec., 1900.

Urobrachya zanzibarica Shelley is distinguished from *U. hildebrandti* Sharpe by having the greater wing-coverts almost entirely black, whereas in the latter species they are almost entirely chestnut.

[This Weaver was found in the open spaces in the bush, usually near swamps. It was plentiful on the road to Shimoni, south of Mombasa.—*A. B. P.*]

10. Pyromelana flammiceps (Swains.).

Pyromelana flammiceps Reich. iii. p. 118.

a, b. ♂ imm. Takaungu, 25th March and 1st April. (No. 172.)

c. Imm. Mombasa.

11. Pyromelana xanthomelas (Rüpp.).

Euplectes xanthomelas Reich. iii. p. 128.

a. ♂. Nairobi. (No. 297.)

b. Imm. Kikuyu Forest, 29th June, 1902. (No. 339.)

Iris dark brown; bill horn-coloured; legs dark brown.

12. Quelea æthiopica (Sundev.).

Quelea sanguinirostris æthiopica Reich. iii. p. 109.

a, b. [♂] ♀. Near Mt. Kilimanjaro, 20th Feb., 1902. (Nos. 247 & 248.)

From Mr. Percival's notes it appears that this species was decidedly scarce. The specimen (no doubt a male) which Mr. Percival procured on Mt. Kilimanjaro is an example of Dr. Reichenow's *Q. intermedia.* This form according to Capt. Shelley (B. of A. iv. p. 115) is probably a cross between Q. *quelea* and Q. *æthiopica,* both of which range into the Great Lake district of Central Africa.

13. Spermestes nigriceps Cass.

Spermestes nigriceps Reich. iii. p. 153.

a. ♀. Shimoni, 19th May, 1901.

b. Kikuyu Forest, 30th June, 1902. (No. 350.)

Bill slate-coloured; legs and feet dark brown.

[This little Weaver-Finch was almost always seen in flocks, some of which were of considerable size. They were more common round Mombasa in the grass-country than at Shimoni. One was seen collecting grass for its nest in March.—*A. B. P.*]

14. Lagonosticta niveo-guttata (Peters).

Hypargos niveoguttatus Reich. iii. p. 157.

a, b. ♂. Takaungu, 28th March, 1901. (No. 150.)

c, d. ♀. Mt. Kilimanjaro, 8th Feb. to 9th March, 1902. (Nos. 227 & 228.)

Bill and feet slate-coloured; wattle round the eye very faint blue.

[Not uncommon in the thick bush, but difficult to obtain, as it can only be seen when at close quarters. It comes to the paths, after rain, to drink.—*A. B. P.*]

15. Lagonosticta brunneiceps Sharpe.

Lagonosticta brunneiceps Reich. iii. p. 196.

a. b. ♂. Takaungu, March 1901. (Nos. 113, 114.)

c, d. M'buguni, 6th Feb., 1902. (Nos. 224, 225.)

[This was the commonest Waxbill; it was usually found in pairs, but sometimes in small flocks of ten or a dozen individuals. Even then the birds were together in pairs.—*A. B. P.*]

16. Amadina alexanderi Neum.

Amadina fasciata alexanderi Neum. Bull. B. O. C. xxiii. p. 43 (1908).

Amadina fasciata Reich. iii. p. 146 (part.).

a–c. ♂ ♀. Near Mt. Kilimanjaro, 18th Jan., 1902.

These specimens are all typical examples of *Amadina alexanderi*. Professor Neumann has renamed *A. sudanensis* Alexander as *A. f. alexanderi*.

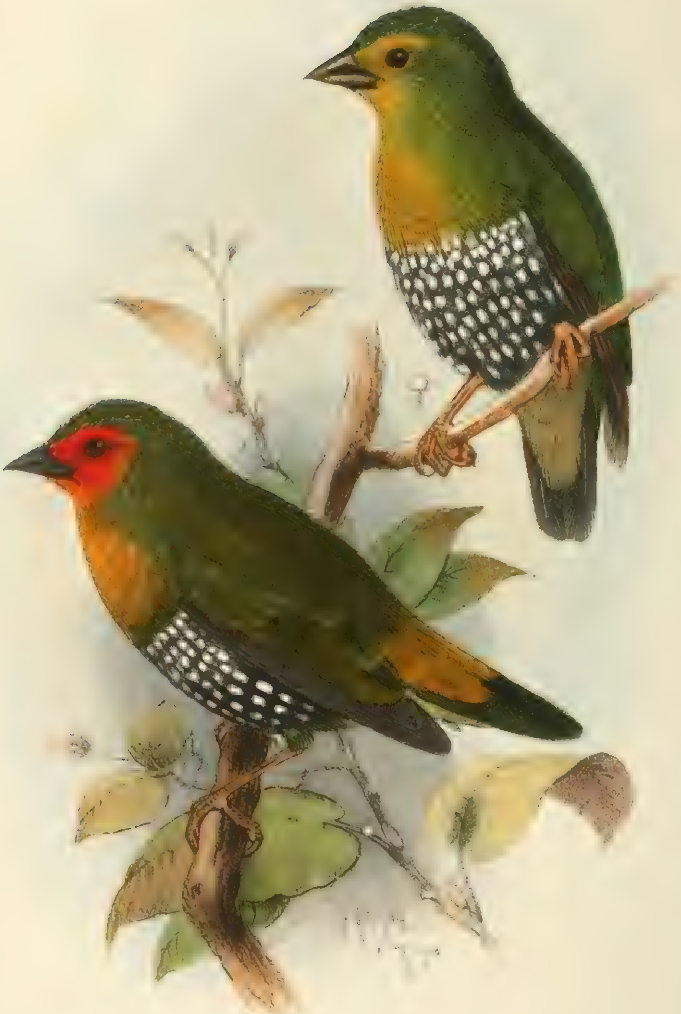
[All these birds were obtained out of one flock at a pool of fresh water about fifty-five miles north of Kilimanjaro; this was the only water to be found for miles, and thousands of birds came there to drink, including Sand-Grouse, Pigeons, Guinea-fowl, &c.—*A. B. P.*]

17. Pytelia afra (Gmel.).

Pytelia afra Reich. iii. p. 162.

a. Ad. Mombasa, Oct. 1900.

[This specimen was shot out of a flock met with at a lake near Mombasa.—*A. B. P.*]



H. Grönvold del.

West, Newman imp.

PYTELIA NITIDULA

18. PYTELIA NITIDULA. (Plate XI.)

Estrelda nitidula Hartl. Ibis, 1865, p. 269 [Natal].

Hypargos nitidulus Shelley, B. of A. iv. p. 242 (1905).

a. [♂] imm. Mombasa, Oct. 1901.

The British Museum possesses an immature male of this very rare species procured at Durban by Gordge, which is, no doubt, a typical example of *P. nitidula* (Hartlaub). This specimen is apparently of the same species as the bird procured by Mr. Percival at Mombasa, but the latter is much more nearly mature. In Mr. Jackson's collection there are four examples of the same species obtained at Entebbe and Marsabit, including an adult pair and two immature birds.

The evidence before us seems clearly to indicate that the East African examples are of the same species as the bird from Natal, but without adult specimens from the latter locality for comparison it is impossible to be quite certain on this point.

The description of the adult male and female is as follows:—

Adult male.—Closely allied to *P. schlegeli* Sharpe, from West Africa, but with a less robust bill and a straighter culmen; the scarlet area round the eye and on the throat is much less intense in colour and much more restricted, and there is only a wash of scarlet on the olive-green chest, whereas in *P. schlegeli* the chest is mostly vermilion. The colour of the upper parts is dull olive, not golden-olive. The bill in dried skins appears to be nearly uniform black, only the tip of the lower mandible being reddish; in *P. schlegeli* the bill is bluish at the base, and the tips of both mandibles as well as the greater part of the lower are rose-colour.

Total length 4 inches; wing 2·0; tail 1·4; tarsus 0·6.

Adult female.—Differs from the male in having the lores and the area round the eyes, as well as the chin and throat, light cinnamon, the middle of the chest and breast being of the same colour; the under tail-coverts are pale yellowish-buff, instead of olive-green.

Total length 4·0 inches; wing 2·0; tail 1·2; tarsus 0·6.

The immature male resembles the female, but the entire under parts are greyish, washed with olive on the chest and sides, and there are one or two rather faintly marked twin-spot feathers visible on the middle of the breast and belly.

I may here remark that, as pointed out by Captain Shelley [Bull. B. O. C. xiv. p. 30 (1903)], Hartlaub, in addition to the *Estrelda nitidula* mentioned above, described an entirely different bird under the name *Lagonosticta nitidula* [Bull. Mus. Belg. iv. p. 145, pl. iv. fig. 2 (1886)]. Capt. Shelley has renamed the latter bird *Hypargus harterti*, but as the two species belong to totally different genera both Hartlaub's names ought to be retained. The character said to distinguish the genus *Hypargus* from *Pytelia* and *Lagonosticta* is the attenuated extremity of the first primary quill.

19. NEISNA KILIMENSIS Sharpe.
Neisna kilimensis Reich. iii. p. 205.
a. Ad. Nairobi, 20th May, 1902.

20. ESTRILDA MINOR (Cab.).
Estrilda astrild minor Reich. iii. p. 180.
a. Imm. Nairobi, 28th May, 1902. (No. 215.)

21. SYCOBROTUS INSIGNIS Sharpe.
Ploceus insignis Reich. iii. p. 36.
a. [♀] ad. Nairobi, 3rd June, 1902. (No. 298.)
b. [♀] ad. Kikuyu Forest, 29th June, 1902. (No. 340.)

This species was originally described by Dr. Sharpe from a female obtained on Mt. Elgon by Mr. F. J. Jackson ('Ibis,' 1891, p. 117, pl. v. fig. 1). The type-specimen in the British Museum has the yellow on the under parts continued on to the throat, as is also the case in a second female from Nandi obtained in June by Mr. Percival. In both these examples the throat is black. This appears to me to be the fully adult plumage. In a male, obtained at Eldoma Ravine in May, the feathers on the throat are black edged with yellow, shewing an intermediate stage of plumage.

22. Melanhyphantes melanoxanthus Cab.

Ploceus melanoxanthus Reich. iii. p. 42.

a, *b*. ♂ ♀. Mombasa, 26th Aug. and Oct. 1900. Nos. 8 & 40.

This Weaver-Finch extends its range across Africa from Mombasa on the east coast to Landana on the west, where the nearly allied species *M. nigricollis* is found. It is distinguished from the latter by having the upper tail-coverts black instead of olive-green.

[These were solitary birds inhabiting low thick bushes: they were very noisy and inquisitive.—*A. B. P.*]

23. Heterhyphantes reichenowi (Fischer).

Ploceus reichenowi Reich. iii. p. 38.

a–e. ♂ ♀ et imm. Kikuyu Forest, 29th March to 30th June, 1902. (Nos. 354 & 360.)

24. Hyphantornis bojeri (Hartl. & Finsch).

Ploceus bojeri Reich. iii. p. 92.

a. ♂. Takaungu, 26th March, 1901.

b. Imm. Mombasa.

The immature bird has the upper mandible dark horn-coloured and the lower mandible yellow.

[This was the commonest Weaver-bird on the coast; hundreds used to nest in the garden of the Mombasa Club.—*A. B. P.*]

25. Hyphantornis spekii Heugl.

Ploceus spekei Reich. iii. p. 65.

a. [♂.] Kikuyu Forest.

26. Hyphantornis xanthops Hartl.

Ploceus xanthops Reich. iii. p. 88.

Hyphantornis xanthops Grant, Trans. Zool. Soc. xix. p. 278 (1910).

a. Kikuyu Forest, 1st July, 1902. (No. 363.)

27. Passer gongonensis Oustalet.

Passer gongonensis Reich. iii. p. 229.

Passer crassirostris Shelley, B. of A. iii. p. 255 (1902).

a. Takaungu, March 1901. (No. 120.)

b. Nairobi, 10th April, 1902. (No. 276.)

Besides the characters mentioned by Captain Shelley, *P. gongonensis* is distinguishable from *P. diffusus* by not possessing the white chin of the latter species.

[At Takaungu this Sparrow was very common in the gardens; it was plentiful also at Nairobi, but very wary.—*A. B. P.*]

28. Serinus citrinelloides (Rüpp.).

Spinus citrinelloides Reich. iii. p. 274.

a. Imm. Kikuyu Forest, 1st July, 1902.

In this specimen, which is no doubt quite a young bird, the feathers on the chin are yellow, and not dusky green as in the mature bird.

The species ranges from Abyssinia to Nyasaland.

29. Emberiza flaviventris Steph.

Emberiza flaviventris Reich. iii. p. 284.

a. Nairobi, 28th May, 1902. (No. 292.)

30. Mirafra fischeri (Reich.).

Mirafra fischeri Reich. iii. p. 339.

a. Mombasa.

[This Lark was common on the mainland near Mombasa. It makes a curious noise with its wings every now and then as it flies along.—*A. B. P.*]

31. Mirafra cantillans Blyth.

Mirafra cantillans Grant, Nov. Zool. vii. p. 248 (1900); Grant & Reid, Ibis, 1901, p. 628; Shelley, B. of A. iii. p. 64 (1902); Reich. iii. p. 335.

a. ♀. M'buguni, 6th Feb., 1902.

This specimen undoubtedly belongs to *M. cantillans*, and is similar in plumage to a bird obtained at Filwa, S. Abyssinia, by Mr. A. E. Pease. I can find no record of this species having been obtained so far south as M'buguni. In his notes Mr. Percival mentions that M'buguni is south of Kilimanjaro.

32. Motacilla campestris Pall.

Budytes campestris Reich. iii. p. 306.

a. Takaungu, 1st April, 1901.

33. Anthus rufulus (Vieill.).

Anthus rufulus cinnamomeus Reich. iii. p. 313.

a. ♂. Takaungu, Dec. 1900.

b. Ad. Takaungu, 30th March, 1901. (No. 161.)

34. Anthus trivialis (Linn.).

Anthus trivialis Reich. iii. p. 311.

a. Ad. Kikuyu Forest, April 1902. (No. 272.)

35. Tmetothylacus tenellus (Cab.).

Anthus tenellus Shelley, B. of A. ii. p. 326.

Tmetothylacus tenellus Reich. iii. p. 325; Jackson, Ibis, 1905, p. 104.

a–d. ♂ vix ad. et ♀ imm. Tsavo Swamp, 15th Feb., 1902. (Nos. 241, 242, 243, 244.)

e. Imm. Nairobi, 5th June, 1902. (No. 303.)

This rare and interesting Pipit was met with by Mr. Percival near the Tsavo River, and one example was obtained at Nairobi. Nos. 241 to 243 are males, and are moulting into the adult plumage; the two others are quite young birds.

[Very common at one place near the Tsavo River; in flight the yellow of the wing is very conspicuous. The young bird marked No. 303 flew into my house at Nairobi. —*A. B. P.*]

36. Macronyx croceus (Vieill.).

Macronyx croceus Reich. iii. p. 321; Grant, Trans. Zool. Soc. xix. p. 314 (1910).

a. Kikuyu Forest, 29th June, 1902.

This is a very fine adult bird, with only a narrow shaft-streak of black immediately below the black gorget.

37. Nectarinia reichenowi Fisch.

Drepanorhynchus reichenowi Reich. iii. p. 504.

a–e. [♂ ♀ et ♂ ♀ imm.] Nairobi, 27th & 28th June, 1902.

[I did not observe examples of this species until June, but during that month it was plentiful, though in poor plumage. —*A. B. P.*]

38. NECTARINIA KILIMENSIS Shelley.

Nectarinia kilimensis Grant, Trans. Zool. Soc. xix. p. 31 (1910).

a, b. [♂ ♀.] Kikuyu Forest, 29th March, 1902. (No. 352.)

c–e. [♂ ♀.] Nairobi, 27th to 29th June, 1902. (Nos. 313, 330, 337.)

[This is the commonest Sunbird in this part of East Africa.—*A. B. P.*]

39. CINNYRIS GUTTURALIS (Linn.).

Chalcomitra gutturalis Reich. iii. p. 464.

a. ♂ vix ad. Mombasa, 2nd Sept., 1900. (No. 19.)

b–d. ♀ et ♂ imm. Takaungu, Dec., Jan., and March. (Nos. 52, 53 & 55.)

The bird which Mr. Percival obtained at Mombasa (No. 19) has almost assumed adult plumage, the feathers on the margin of the breast are edged with white, and the black feathers on the belly and flanks are irregularly tipped with white and pale buff, giving it a mottled appearance: the greater wing-coverts are also light buff.

[This was the common Sunbird of the coast, and was very plentiful in the months of December and January, after which its numbers slightly diminished. It frequented the flowers of the Papai trees growing close to my house, and seemed quite fearless, even venturing into the middle of the town. In December there were many males in changing plumage, but these disappeared later.—*A. B. P.*]

40. CINNYRIS MICRORHYNCHUS Shelley.

Cinnyris microrhynchus Grant, Trans. Zool. Soc. xix. p. 327 (1910).

a. ♂ vix ad. Mombasa, 20th Sept., 1900. (No. 36.)

b. ♂. Takaungu, 31st March, 1901. (No. 168.)

In his paper quoted above, Mr. Ogilvie-Grant notes the strange differences in plumage of the male examples which he received from Ruwenzori, especially in the colour of the under tail-coverts. In the two male birds in Mr. Percival's collection this difference in colour is also borne out. A fully adult male (No. 168) has the under tail-coverts brilliant metallic blue; the wing of this bird measures 2·25 inches: the other specimen, which is not quite adult, has the under tail-coverts tipped with metallic green; the wing of this bird measures 2·2 inches.

[Rare; only two seen anywhere on the coast.—*A. B. P.*]

41. CINNYRIS KIRKI Shelley.

Chalcomitra kirki Reich. iii. p. 460.

a, b. ♂ et imm. Takaungu, 22nd & 24th March, 1901. (Nos. 57, 109.)

c. [♂] ad. Kikuyu Forest, 1st July, 1902. (No. 371.)

[Somewhat rare on the coast, mostly seen near Mombasa; scarce at Nairobi.—*A. B. P.*]

42. CINNYRIS FALKENSTEINI Fisch. & Reich.

Cinnyris venustus falkensteini Reich. iii. p. 474.

Cinnyris falkensteini Grant, Trans. Zool. Soc. xix. p. 325 (1910).

a, b. ♂. Nairobi, 29th May and 29th June, 1902. (Nos. 240 & 335.)

c. ♂. Base of Mt. Kilimanjaro, 23rd Jan., 1902. (No. 222.)

The adult male which Mr. Percival obtained at the foot of Mt. Kilimanjaro has the belly and flanks very much more orange-yellow than is the case with the Nairobi birds.

[Common on Kilimanjaro and in the Kikuyu Forest.—*A. B. P.*]

43. ANTHOTHREPTES ZAMBESIANUS Shelley.

Anthothreptes zambesiana Grant, Ibis, 1908, p. 286.

a, b. [♂ ♀.] Mombasa, Sept. 1900. (No. 20.)

c. ♂. Takaungu, 24th March, 1901. (No. 59.)

d, e. [♂ ♀.] Kikuyu Forest, 26th to 29th June, 1902. (Nos. 342 & 346.)

[Common on Kilimanjaro and at the edge of the Kikuyu Forest. It was also fairly plentiful at Takaungu.—*A. B. P.*]

44. PARUS ALBIVENTER Shelley.

Parus albiventris Reich. iii. p. 514.

a. ♂. Nairobi, 27th June, 1902. (No. 331.)

b. [♀ ?] Kikuyu Forest, 1st July, 1902. (No. 370.)

The male bird from Nairobi is in a very worn condition, while the example from the Kikuyu Forest, which is probably an adult female, is in freshly moulted plumage.

[These Tits were met with in the open parts of the forest. —*A. B. P.*]

45. TELEPHONUS ERYTHROPTERUS Shaw.

Pomatorhynchus senegalus Reich. ii. p. 547.

Telephonus erythropterus Shaw; Grant, Trans. Zool. Soc. xix. p. 337 (1910).

a. ♂. Takaungu, 1st April. (No. 162.)

The specimen has the continuous buff eyebrow-stripe characteristic of this form.

[Common all along the coast. At Mombasa, Shimoni, and Takaungu it was found in the more open bush, and frequented the native gardens. At Nairobi it was rare.—*A. B. P.*]

46. LANIUS CAUDATUS Cab.

Lanius caudatus Reich. ii. p. 613; Grant, Nov. Zool. ix. p. 468.

a. [♀ .] Mombasa, 8th Sept., 1900. (No. 6.)

b. [♀ .] Malindi, 21st Feb., 1901. (No. 65.)

The specimens of these fine Shrikes are both in the freshly moulted plumage of the adult female, the sex of the bird obtained at Mombasa (marked male) having doubtless been wrongly determined. As Mr. Ogilvie-Grant points out in his paper, the adult female in freshly moulted plumage differs from the male in having a large patch of dark chestnut feathers on each side of the body.

[I found these Shrikes very common on the telegraph-wires near Malindi. At one spot I noticed fully fifty of them perched on the wires within a distance of three hundred yards. On the mainland, near Mombasa, they were scarce, and at Takaungu none were observed. They seem to prefer fairly open country, and to keep in small parties of from six to ten.—*A. B. P.*]

47. Lanius humeralis Stanl.

Lanius humeralis Grant, Nov. Zool. ix. p. 466; Reich. ii. p. 609.

a. [♀.] Kikuyu Forest, 29th June, 1902. (No. 333.)

The only example of this Shrike obtained by Mr. Percival is a female in very worn plumage. The under parts are strongly tinged with smoky brown and the tail is in a very worn condition, but the broad white tips to the outer tail-feathers seem to distinguish this species from *Lanius smithi* Fraser.

[This is the commonest Shrike here; it breeds in the thick thorn bushes.—*A. B. P.*]

48. Lanius collurio Linn.

Lanius collurio Grant, Nov. Zool. ix. p. 471; Reich. ii. p. 622.

a. ♂. Takaungu, April 1901. (No. 167.)

This specimen has the back very dark chestnut.

[A few only were seen before March, but during that month they became numerous on their migration northwards. At Nairobi from the middle of March to the beginning of May they were common. The last one was seen on May 20th.—*A. B. P.*]

49. Laniarius quadricolor Cassin.

Laniarius quadricolor Cassin, Pr. Ac. Philad. 1851, p. 245.

Chlorophoneus quadricolor Reich. ii. p. 566.

a. Ad. Malindi, 28th Feb., 1901. (No. 124.)

b. Ad. Takaungu, 15th March, 1901. (No. 123.)

In the adult male the basal portion of the central tail-feathers is olive-green, the remainder being black, but the bases of the outer webs of the outer tail-feathers are strongly washed with olive-green.

The adult female differs from the male in having the tail-feathers entirely green and in lacking the broad black band across the chest, which is indicated only by a few of the feathers being narrowly tipped with black.

An apparently immature female in the British Museum has the throat yellow and only the tips of the feathers scarlet there is no black band across the chest; the two central pairs of tail-feathers are olive-green, and the remainder black, the outer webs being washed with olive.

The immature females are similar to the immature males, but have the tail-feathers entirely green.

A specimen in the British Museum from Durban has nearly assumed the plumage of the adult male, but the tail is almost entirely green, only the under surface of the feathers being edged with black.

Mr. Percival's birds, from Mombasa and Malindi, as well as a third specimen from Mombasa in the Museum, have the throat of a much deeper scarlet than the birds from Natal, and have much more black on the feathers of the tail; they are altogether richer in colour. But this is also shown in a specimen obtained in Portuguese East Africa by Mr. Claude Grant, so that the dark birds are not confined to the north, as I had at first supposed.

50. DRYOSCOPUS SUBLACTEUS Cassin.

Laniarius sublacteus Reich. ii. p. 576.

a–c. ♂ et ♀ imm. Takaungu, March to 1st April, 1901. (Nos. 105, 116, 170.)

[This was the commonest Bush-Shrike on the coast. It was found everywhere in the thick bush. The native name for this species was "Belgapal."—*A. B. P.*]

51. DRYOSCOPUS FUNEBRIS Hartl.

Laniarius funebris Reich. ii. p. 574.

a. ♀. Mt. Kilimanjaro, 18th Jan., 1902. (No. 214.)

52. DRYOSCOPUS SUAHELICUS Neumann.

Dryoscopus cubla suahelicus Neumann, J. f. O. 1899, p. 414.

Dryoscopus cubla hamatus Reich. ii. p. 594.

a, b. ♂ ♀. South of Mt. Kilimanjaro, 9th Feb., 1902. (Nos. 231, 232.)

53. DRYOSCOPUS SALIMÆ Finsch & Hartl.

Dryoscopus salimæ Neumann, J. f. O. 1899, p. 415.

Dryoscopus affinis Reich. ii. p. 590.

a, b. ♂ ♀. Takaungu, Feb. 1901. (No. 117.)

[Common all along the coast.—*A. B. P.*]

54. Nicator gularis Finsch. & Hartl.

Nicator gularis Reich. ii. p. 555.

a. Ad. Mt. Kilimanjaro, 9th Feb., 1902. (No. 234.)

55. Nilaus minor Sharpe.

Nilaus afer minor Reich. ii. p. 540.

Nilaus minor Bannerman, Ibis, 1910, p. 303.

a. ♂. Foot of Mt. Kilimanjaro, 21st Jan., 1902. (No. 219.)

[This bird was found in dense forest. It was very hard to see, and still harder to procure.—*A. B. P.*]

56. Eurocephalus rueppelli Bp.

Eurocephalus rüppelli Reich. ii. p. 526.

a. ♀. Kilimanjaro, 21st Jan., 1902. (No. 217.)

[This Shrike is found in the bush-countries at an elevation of about 2500–3000 ft. I did not meet with it on any higher ground.—*A. B. P.*]

57. Sigmodus graculinus Cab.

Sigmodus graculinus Jackson, Ibis, 1901, p. 48.

Sigmodus retzii graculinus Reich. ii. p. 536.

a. Ad. Shimoni, May 1901.

b, c. ♀ et imm. S. of Mt. Kilimanjaro, 9th Feb., 1902. (Nos. 238, 239.)

Mr. F. J. Jackson, in his paper quoted above, gives a review of the genus *Sigmodus*. In the three specimens which Mr. Percival obtained, those from Kilimanjaro shew faint spots on the primaries, whereas in the example from Shimoni none are apparent. All the specimens in the British Museum from Nyasaland, the Zambesi River, Angoniland, and Oliphant's River have the white bar on the primaries much pronounced.

[This bird was rare, one party of ten or twelve was seen at Takaungu, and one was obtained at Shimoni, near Mt. Kilimanjaro, where it seemed to be much more plentiful. —*A. B. P.*]

58. Sylviella micrura (Rüpp.).

Sylvietta leucopsis Reich. iii. p. 629.

a. ♀. Foot of Mt. Kilimanjaro, 21st Jan., 1902. (No. 216.)

See the remarks on *Sylviella brachyura* by Mr. Grant, Ibis, 1907, p. 593.

59. Sylviella whytii Shelley.

Sylviella whytii Grant, Ibis, 1900, p. 157.

Sylvietta whytei Reich. iii. p. 627.

a. Mombasa. (No. 22.)

60. Camaroptera griseoviridis (v. Müll.).

Camaroptera griseoviridis Reich. iii. p. 616.

a. Ad. Tanganiko, Feb. 1901. (No. 128.)

b. ♀. Foot of Mt. Kilimanjaro, 21st Jan., 1902. (No. 218.)

61. Eremomela scotops Sundev.

Eremomela scotops Reich. iii. p. 638.

a, b. Imm. Nairobi, 28th May, 1902. (Nos. 282, 283.)

This Warbler is known from Mashonaland and the country north of the Transvaal. Hitherto, so far as I can ascertain, it has never been recorded from Nairobi. The birds obtained by Mr. Percival are both immature, and have the belly and flanks white, very faintly tinged with yellow.

[These two examples were shot out of a flock of eight or ten birds, all of which appeared to be immature.—*A. B. P.*]

62. Euprinodes flavocincta Sharpe.

Euprinodes flavocincta Sharpe, J. f. O. 1882, p. 346.

Euprinodes golzi Fischer & Reich. J. f. O. 1884, p. 182.

Apalis flavocincta Reich. iii. p. 612.

a. Ad. Nairobi.

E. golzi from Aruscha appears to be synonymous with *E. flavocincta*. In his key to the species of *Apalis* Dr. Reichenow (iii. p. 600) says that the entire head is grey, but on referring to the original description given by Drs. Fischer and Reichenow (J. f. O. 1884, p. 182) we are expressly informed that the feathers on the hinder part of the head are grey tipped with olive-green, which is the distinguishing characteristic of *E. flavocincta*. The type of *E. golzi* was procured at Great Aruscha, while the typical examples of *E. flavocincta* were procured by Hildebrandt on the Athi River in Ukamba.

[I only saw one example of this species at Kilimanjaro besides the bird obtained at Nairobi.—*A. B. P.*]

63. Prinia mystacea Rüpp.
Prinia mystacea Reich. iii. p. 590.
a. Ad. Mombasa.
b. Ad. Nairobi, 21st May, 1902. (No. 285.)

64. Cisticola rufa (Fraser).
Cisticola rufa Reich. iii. p. 567.
a. ♂ imm. Shimoni, 18th May, 1901.

Upper mandible horn-coloured, lower mandible yellowish flesh-coloured; legs pale flesh-coloured.

65. Cisticola lugubris (Rüpp.).
Cisticola lugubris Reich. iii. p. 552.
a. Ad. Takaungu, 15th March, 1901. (No. 132.)
b. Shimoni, June 1901.

The native name for this bird is said to be "Dohasā."

66. Cisticola cinerascens (Heugl.).
Cisticola semitorques Reich. iii. p. 563.
a, b. ♂. Kikuyu Forest, 23rd & 24th April, 1902. (Nos. 263, 268.)

67. Cisticola nuchalis Reich.
Cisticola nuchalis Jackson, Ibis, 1901, p. 59.
Cisticola ambigua Sharpe, Bull. B. O. C. xi. p. 28 (1900).
Cisticola robusta nuchalis Reich. iii. p. 555.
a, b. Kikuyu Forest, April 1902.

Dr. Sharpe has separated examples from Mau under the name *Cisticola ambigua* on account of their uniform flanks. This difference seems to be individual and is certainly not of specific importance.

68. Cisticola chiniana (Smith).

Cisticola chiniana Reich. iii. p. 546.

a. ♀. Shimoni, 19th May, 1901.

Bill horn-coloured; legs pale flesh-coloured.

69. Cisticola erythrops (Hartl.).

Cisticola erythrops Reich. iii. p. 568.

a. Kikuyu Forest, 29th June, 1902.

70. Cisticola pictipennis Madarász.

Cisticola pictipennis Reich. iii. p. 564; Grant, Ibis, 1908, p. 295.

a, b. Ad. Nairobi, Kikuyu Forest, 29th June, 1902.

This rare species has recently been recorded by Mr. Ogilvie-Grant from the Mfumbiro Volcanoes, where it was procured by Mr. Douglas Carruthers. It was also found at Nairobi by Mr. F. J. Jackson. The present specimens, which were procured in the latter locality, agree perfectly with those examined by Mr. Grant, and are probably both males, as the wing-measurement is 2·15 inches (=54 mm.) in both.

71. Philomela golzi Cab.

Aedon golzi Reich. iii. p. 787.

a. Ad. Takaungu, 30th March, 1901. (No. 165.)

P. golzi is known to be found in Equatorial Africa in winter, but the British Museum does not contain any specimens from that country. The example procured by Mr. Percival agrees with those from Turkestan and S. Arabia. It was the only specimen met with by him.

72. Monticola saxatilis (Linn.).

Monticola saxatilis Reich. iii. p. 699.

a, b. ♂ ♀. Takaungu, 27th & 28th March. (Nos. 106 & 151.)

[I did not meet with this bird until March 20th, but after that date it became extremely common. The males outnumbered the females considerably; after March 30th more females began to appear. All the birds were extremely fat.—*A. B. P.*]

73. Cossypha heuglini Hartl.

Cossypha heuglini Reich. iii. p. 758.

a. ♂. Takaungu, 26th March. (No. 149.)

b. ♀. Swamp at Nairobi, 20th May, 1902. (No. 291.)

[This bird has a very pretty song. It was more often heard than seen. Whilst singing it has a habit of jerking the wings and tail. At Nairobi it was fairly common in the reed-beds and thick scrub.—*A. B. P.*]

74. Myrmecocichla cryptoleuca Sharpe.

Myrmecocichla æthiops cryptoleuca Reich. iii. p. 706.

a, b. ♂. Nairobi, 5th & 15th June, 1902. (Nos. 304 & 309.)

[A common species in this part of British East Africa.—*A. B. P.*]

75. Saxicola pileata (Gmel.).

Saxicola pileata Reich. iii. p. 718.

a. ♀. Mombasa.

b. Shimoni, 19th May, 1901.

This Wheatear has not hitherto been recorded from Mombasa. It is a southern form which has an extensive range in South Africa. Mr. Jackson procured it as far north as Lake Naivasha. The only note Mr. Percival has made is that it is rare.

76. Erythropygia zambesiana Sharpe.

Erythropygia zambesiana Reich. iii. p. 774.

a. ♂. Takaungu, 12th Jan., 1901. (No. 146.)

77. Cichladusa guttata (Heugl.).

Cichladusa guttata Reich. iii. p. 766.

a, b. ♂. Takaungu, 10th Feb. & 24th March, 1901. (Nos. 142 & 147.)

Examples of this species from the East Coast-districts are distinctly smaller than those found in Uganda and the Lake District. In Mr. Percival's specimens from Takaungu and in a female procured by Dr. Fischer at Kau, to the north of Malindi, the wing measures 3·0 to 3·1 inches, while in specimens from the interior it varies in length from 3·3 to 3·55 inches.

78. Cichladusa arcuata Peters.

Cichladusa arcuata Reich. iii. p. 765.

a. Mombasa. (No. 21.)

b. ♂. Shimoni, 19th May, 1901.

Bill dark horn-coloured; legs slate-brown.

[This bird was not common. It was found in thick bush. —*A. B. P.*]

79. Crateropus squamulatus Shelley.

Crateropus squamulatus Shelley, Ibis, 1881, p. 45; Reich. iii. p. 661.

a. Mombasa.

The example obtained by Mr. Percival at Mombasa agrees entirely with Capt. Shelley's description in the paper quoted above. The under parts and under tail-coverts are much less rufous than in the type-specimen from the same locality, which is in the British Museum.

[This was an extremely noisy bird. It was not uncommon in the more open bush.—*A. B. P.*]

80. Argya saturata Sharpe.

Argya rubiginosa heuglini Reich. iii. p. 673.

a–c. ♂ ♀. Takaungu, 29th & 30th March, 1901. (Nos. 159, 163, & 164.)

The upper parts in this dark coastal form of *Argya* appear to be rather characteristic, and help to distinguish it from the allied forms *A. rubiginosa* and *A. rufula*. In the present specimens the general colour above is darker brown, with well-marked dark shaft-streaks to the feathers of the crown, nape, and back, whereas these markings are scarcely apparent in the allied forms. The other distinguishing features, such as the chestnut colour of the lores, are given by Dr. Sharpe in his original description (*cf.* P. Z. S. 1895, p. 488).

[Fairly common in the more open bush.—*A. B. P.*]

81. Macrosphenus kretschmeri (Reich. & Neum.).

Macrosphenus kretschmeri Reich. iii. p. 614.

a. South of Mt. Kilimanjaro, 9th Feb., 1902. (No. 233.)

The type of this rare species was also procured on Mt.

Kilimanjaro. The specimen obtained by Mr. Percival is somewhat shorter than those measured by Dr. Reichenow, the total length being about 155 mm. (as against 170 mm.), wing 68, tail 68. The bird should probably be placed in a distinct genus. It differs from typical examples of *Macrosphenus* in having a shorter and stouter bill and a longer tail. It is a welcome addition to the British Museum, in which it was not previously represented.

82. PYCNONOTUS LAYARDI Gurney.

Pycnonotus layardi Reich. iii. p. 423.

a. Ad. Mombasa. (No. 117.)

b. Ad. Takaungu, 27th March, 1901. (No. 126.)

c. Ad. Kikuyu Forest, 30th June, 1902. (No. 359.)

[This Bulbul is one of the commonest birds in Eastern Africa.—*A. B. P.*]

83. CHLOROCICHLA PERCIVALI Neum.

Criniger gracilirostris percivali Neumann, Orn. Monatsb. p. 185 (1903).

Andropadus gracilirostris Reich. (nec Strickl.) iii. p. 411 [part.].

a. ♀. Kikuyu Forest, 29th March, 1902. (No. 252.)

b. Ad. Nairobi, 21st May, 1902. (No. 310.) [*Type of the species.*]

The type of this species is in the British Museum; the specimen is labelled in Professor Neumann's handwriting. He was permitted to examine and describe this new species in Mr. Percival's collection on the understanding that it was to be made the type of the species. We observe, however, that Professor Neumann states that the type-specimen is in the Berlin Museum (*cf.* Orn. Monatsb. 1903, p. 185), but this may be an error! *Chlorocichla percivali* is distinguished from *C. gracilirostris* by its brighter green upper parts and greyer under parts.

84. PHYLLOSTROPHUS STREPITANS Reich.

Phyllastrephus strepitans Reich. iii. p. 405.

Phyllostrophus pauper Sharpe, P. Z. S. 1895, p. 489.

a, b. ♀. Mombasa, Aug. and Oct. 1900. (Nos. 5 & 28.) Iris hazel.

The British Museum possesses examples of this brown-backed species from the Shebeli River in Southern Somaliland (whence came the type-specimen of *P. pauper* Sharpe), the Omo River in South-western Abyssinia, Gwasa Nyro (British East Africa), and Dar-es-Salaam on the coast of German East Africa. The last-named locality appears to be its southern limit. The type of *P. strepitans* was procured at Malindi. To the south *P. suahelicus* is found, and, according to Dr. Reichenow, ranges from the Pangani River to the Rufiji River in German East Africa. The British Museum possesses specimens of this olive-backed species from the Rovuma River and from Nyasaland.

85. ANDROPADUS EUGENIUS Reich.

Andropadus latirostris eugenius Reich. iii. p. 415.

a, b. Kikuyu Forest, 24th April to 30th Jan., 1902. (Nos. 267 & 354.)

The stripes on the sides of the throat appear to be wider and of a brighter yellow in the male than in the female. Mr. Percival failed to ascertain the sex of the two specimens mentioned above, but they are probably male and female, as indicated by the markings on the throat.

[These birds are not rare, but keep to the thick bush and are consequently hard to procure.—*A. B. P.*]

86. ANDROPADUS INSULARIS Hartl.

Andropadus insularis Reich. iii. p. 48.

a, b. Takaungu.

Dr. Reichenow (*op. cit.*) has referred *A. flavescens* Hartl. to the synonymy of *A. insularis* Hartl., and distinguishes the present yellower form (from Malindi and Zanzibar) under the trinomial "*A. i. subalaris.*" The allied form *A. flavescens* Hartl., described from Zanzibar, differs from the present in having the under wing-coverts bright golden yellow, while the belly is also of a somewhat brighter yellow.

[Common in the thickest bush. It is a noisy bird.—*A. B. P.*]

87. CAMPOPHAGA NIGRA Vieill.

Campephaga nigra Reich. ii. p. 518.

a. ♀. Foot of Mt. Kilimanjaro, 20th Jan., 1902. (No. 223.)

88. GRAUCALUS CÆSIUS Licht.

Coracina cæsia Reich. ii. p. 514.

Coracina pura Reich. ii. p. 515.

Graucalus cæsius Grant, Trans. Zool. Soc. xix. p. 389 (1910).

a. [♂.] Nairobi, 28th June, 1902. (No. 324 *a.*)

89. ALSEONAX MURINUS Fisch. & Reich.

Alseonax murinus Reich. ii. p. 458.

a, b. Ad. et imm. Kikuyu Forest, 30th June & 1st July, 1902. (Nos. 351 & 366.)

90. MUSCICAPA CÆRULESCENS Hartl.

Alseonax cærulescens Reich. ii. p. 454.

a. ♀. Mt. Kilimanjaro, 9th Feb., 1902. (No. 237.)

91. BRADYORNIS SUBALARIS Sharpe.

Bradornis pallidus murinus Reich. ii. p. 436.

a, b. ♂. Mombasa, 7th Sept., 1900. (No. 3.)

c, d. Takaungu, 27th March.

The wing-measurements of these four examples are 3·2–3·25 inches, that of the type-specimen is 3·2 inches.

[These Flycatchers, locally known as "Shotâ," were very common; they were usually seen in pairs haunting open spaces, and when the bush was cleared they took possession of the "Shambas," where they might be found frequenting the same tree-stump time after time.—*A. B. P.*]

92. DIOPTRORNIS FISCHERI Reich.

Dioptrornis fischeri Reich. ii. p. 440.

a–c. ♀ et imm. Kikuyu Forest, 23rd April to 30th June, 1902. (Nos. 264, 338, 353.)

No. 353, an immature bird, differs from the adult specimens in having the greater wing-coverts and outer pair of tail-feathers spotted with white at the extremity; the breast is distinctly tinged with sandy brown, producing a somewhat soiled appearance.

[From April to July this species was very common, but previously to that none were seen.—*A. B. P.*]

93. Tarsiger orientalis Fisch. & Reich.

Tarsiger orientalis Reich. iii. p. 778.

a. Nairobi, 5th June, 1902. (No. 305.)

94. Chloropeta massaica Fisch. & Reich.

Chloropeta massaica Grant, Trans. Zool. Soc. xix. p. 396 (1910).

a–b. Kikuyu Forest, 18th May, 1902. (Nos. 273, 280.)

Mr. Percival met with this rare Flycatcher in the Kikuyu Forest. I have compared his specimens with others from Nairobi and Abyssinia in the British Museum, and find them similar in every respect.

The curious point is that the type-specimen of the nearly allied, but quite distinct, species *C. storeyi* Grant [*cf.* Bull. B. O. C. xix. p. 32 (1906)] was procured on the Nairobi River at an elevation of 5450 ft., which is close to the Kikuyu Forest. *C. storeyi* is an altogether darker bird and has the entire crown sooty black. In the original description the locality is given as "Chedaro," but this has been proved to be the Masai name for the bird.

95. Batis senegalensis (Linn.).

Batis senegalensis Reich. ii. p. 480.

a. Ad. Takaungu, 29th March, 1901. (No. 161 *a.*)

[These pretty little Flycatchers were not uncommon; they were usually found in pairs or small parties. I came across a young bird just out of the nest in December.—*A. B. P.*]

96. Bias musicus (Vieill.).

Bias musicus Reich. ii. p. 469.

a. ♀. Takaungu, 16th March, 1901. (No. 131.)

[I saw one pair at Mombasa, and obtained a female at Takaungu.—*A. B. P.*]

97. TERPSIPHONE PLUMBEICEPS Reich.

Tchitrea plumbeiceps Reich. ii. p. 510.

Terpsiphone plumbeiceps Swynnerton, Ibis, 1908, p. 98.

a, b. ♂. Takaungu, Feb. 1901. (No. 133.)

c. ♂. Shimoni, 19th May, 1901.

Iris blue; upper mandible black, lower mandible slate-coloured; legs bluish slate-coloured.

According to Dr. Reichenow this species ranges from South Africa northwards along the lake-district to the Congo and Niam Niam. It does not appear to have been recorded from the coast-district of East Africa.

[Common in thick bush near Shimoni.—*A. B. P.*]

98. TERPSIPHONE VIRIDIS (Müll.).

Tchitrea viridis Reich. ii. p. 504.

a–c. [♂] et imm. Kikuyu Forest, 29th–30th May, 1902. (Nos. 344, 348, 349.)

No. 349 is a male with the edges of the inner primaries and secondaries white; the tail with its long middle pair of tail-feathers is entirely chestnut.

No. 344 has the tips of the greater secondary wing-coverts white, but the rest of the upper parts are chestnut.

99. TROCHOCERCUS BIVITTATUS Reich.

Trochocercus bivittatus Reich. ii. p. 499.

a. ♀. Mt. Kilimanjaro, 9th Feb., 1902. (No. 235.)

The specimen is in freshly moulted plumage. It is darker on the upper parts than two female examples in the British Museum, and does not shew the olive-green tint which seems to be characteristic of them.

100. HIRUNDO MONTEIRI Hartl.

Hirundo monteiri Reich. ii. p. 416.

a. Ad. Tanganiko, Feb. 1901. (No. 121.)

[This Swallow was not found in Takaungu, but was common at Tanganiko, about twelve to fifteen miles distant. It appeared to be breeding in the hollows of the bark of a Baobab tree. Its flight was heavy and powerful, and it seemed to prefer to sit on the tops of trees.—*A. B. P.*]

101. Hirundo puella Temm. & Schl.
Hirundo puella Reich. ii. p. 413.
a. Ad. Kikuyu Forest, 29th June, 1902. (No. 326.)

102. Thripias schoensis (Rüpp.).
Mesopicos schoensis Reich. ii. p. 191.
a. [♀.] Near Shimoni.

103. Mesopicus rhodeogaster Fisch. & Reich.
Mesopicos spodocephalus rhodeogaster Reich. ii. p. 188.
a. [♂.] Nairobi, 5th June, 1902. (No. 306.)

M. rhodeogaster (the type of which was from Masailand) is closely allied to *M. spodocephalus*, from which it is distinguished in having the breast and flanks of a much greyer colour. It also has a barred tail, whereas in examples of *M. spodocephalus* in the British Museum these bars are absent. This latter character is, however, of small importance, as it has already been pointed out that the variation in the markings on the wings and tail is largely due to immaturity.

[Only a few were seen.—*A. B. P.*]

104. Campothera nubica (Gm.).
Dendromus nubicus Reich. ii. p. 178.
a. [♀.] Mombasa, Oct. 1900. (No. 29.)
b. [♀.] Shimoni, May 1901.

105. Campothera malherbii (Cassin).
Dendromus malherbei Reich. ii. p. 172.
a, b. ♂ ♀. Mombasa, Oct. 1900. (Nos. 30, 31.)

106. Iynx pectoralis (Vig.).
Iynx pectoralis Reich. ii. p. 164.
a. Ad. Nairobi, 29th May, 1902. (No. 290.)

Mr. Percival remarks that this Wryneck is rare in British East Africa.

107. Indicator indicator (Gm.).
Indicator indicator Reich. ii. p. 104.
a. Ad. Takaungu, 18th March, 1901. (No. 63.)

[Honey-Guides were scarce at Takaungu ; I only saw this one bird as we were marching to Malindi. In the bush-country they were fairly numerous, and I have not the slightest doubt as to the truth of their leading men to bees' nests.—*A. B. P.*]

108. Barbatula affinis Reich.

Barbatula affinis Reich. ii. p. 152.

a, b. ♂. Malindi, 1st March, 1901. (Nos. 61, 62.)

[These little Barbets are very difficult to see, though often heard. At Malindi I shot two examples out of a small party of them.—*A. B. P.*]

109. Barbatula bilineata (Sund.).

Barbatula bilineata Reich. ii. p. 147.

a. ♂. Takaungu.

Dr. Reichenow gives the range of this species as South-east Africa, from Zululand to Nyasaland. The example obtained at Takaungu by Mr. Percival is slightly smaller than those in the British Museum. Total length about 3·7 inches; wing 2·0; tail 1·2; tarsus 0·6.

110. Lybius melanopterus (Peters).

Lybius melanopterus Reich. ii. p. 121.

a. Ad. Mombasa, May 1903. (No. 160.)

[The Red-headed Barbet was not uncommon in the open country near Mombasa and also in the neighbourhood of Malindi.—*A. B. P.*]

111. Lybius senex (Reich.).

Lybius senex Reich. ii. p. 123.

a, b. Ad. Nairobi, 29th June, 1902. (Nos. 334, 334 *a*.)

[This Barbet was not uncommon; it was usually met with in small flocks of five or six birds.—*A. B. P.*]

112. Smilorhis kilimensis Shelley.

Buccanodon kilimense Reich. ii. p. 142.

a, b. ♂. South of Mt. Kilimanjaro, 8th and 9th Feb., 1902. (Nos. 229, 230.)

The type of this species, which is in the British Museum, was procured on Kilimanjaro by Mr. H. C. V. Hunter.

The two birds obtained by Mr. Percival in February are in worn condition and moulting.

113. GALLIREX CHLOROCHLAMYS Shelley.

Gallirex chlorochlamys Reich. ii. p. 40.

a. Ad. Kikuyu Forest, 20th May, 1902. (No. 295.)

[A common species in all the forest-country of E. Africa. —*A. B. P.*]

114. TURACUS FISCHERI (Reich.).

Turacus fischeri Reich. ii. p. 44 (1902).

a. Ad. Shimoni, 10th June, 1901. (No. 66.)

[This is by no means a common species.—*A. B. P.*]

115. COCCYSTES ALBONOTATUS Shelley.

Coccystes albonotatus Shelley, Cat. Birds B. M. xix. p. 224 (1891).

Coccystes serratus Reich. ii. p. 75.

a, *b*. Ad. Takaungu, March 1901. (Nos. 134, 135.)

[During my march this Cuckoo was common and very noisy. It seems to visit this part of Africa for about six weeks only in the year.—*A. B. P.*]

116. COCCYSTES GLANDARIUS (Linn.).

Coccystes glandarius Reich. ii. p. 81.

a. Ad. Lake Naivasha, Nov. 1901. (No. 295 *a*.)

This is a very fine adult example in freshly moulted plumage.

[The Great Spotted Cuckoo is rare in British East Africa.—*A. B. P.*]

117. CHRYSOCOCCYX KLAASI (Steph.).

Chrysococcyx klaasi Reich. ii. p. 98.

a. ♀ imm. Takaungu, Jan. 1901. (No. 127).

b, *c*. ♀. Kikuyu Forest, 5th April, 1902. (Nos. 260, 261.)

[This little Cuckoo was numerous at Takaungu, but seems to leave the district before February, only one or two individuals being subsequently heard.—*A. B. P.*]

118. COLIUS LEUCOTIS Rüpp.

Colius leucotis Reich. ii. p. 204; Sclat. Wytsman's Gen. Av., Coliidæ, p. 5 (1905).

a. ♀. Mombasa, 26th Aug., 1900. (No. 4.)
b. Ad. Takaungu.

Feet coral-pink.

The native name for this bird is "Shuella."

[This Coly is a very common species, and extremely destructive to gardens; I may mention that they took most of my custard-apples without waiting for them to ripen.—*A. B. P.*]

119. CYPSELUS AFFINIS (Gray & Hardw.).

Apus affinis Reich. ii. p. 382.

a, b. Ad. Mombasa, Oct. 1900. (No. 38.)

[There were three colonies of these Swifts near Mombasa; one, about three miles from the town, contained several hundred nests, which formed a bunch as large as a clothes-basket. In October I pulled down eight or ten of them, but found no eggs.

A second colony, which was situated under the veranda of one of the houses in Mombasa, was almost, if not quite, as large. The third was in a small cave on the north side of Takaungu Creek, just above high-water mark, but this I did not examine at close quarters.—*A. B. P.*]

120. CYPSELUS SHELLEYI Salvad.

Apus shelleyi Reich. ii. p. 378.

a, b. ♀. Kikuyu Forest, May 1902. (Nos. 276, 288.)

These examples belong to a rare species, which ranges from Shoa to British Central Africa. There are specimens of it in the British Museum from Shoa, Zomba in Nyasaland, and Mount Kinangop in the Naivasha District.

121. CAPRIMULGUS FOSSII Hartl.

Caprimulgus fossei clarus Reich. ii. p. 367.

Caprimulgus fossei Reich. ii. p. 365; Grant, Trans. Zool. Soc. xix. p. 428 (1910).

a, b. ♀. Takaungu, Dec. 1900 and 23rd Jan., 1901. (Nos. 139, 141.)

c. ♀. Malindi, 3rd March, 1901. (No. 140.)

The wing-measurements of the three birds are, respectively, 5·45, 5·5, and 5·75 inches.

[Nightjars were not particularly common at Takaungu, but a few pairs were found in the neighbourhood. At Malindi they were more plentiful, and there I found two eggs, placed under a bush amongst dead leaves. One night at Takaungu I saw three of these Nightjars hawking for insects round the tops of the trees. They were rare at Shimoni.—*A. B. P.*]

122. CAPRIMULGUS FRENATUS Salvad.

Caprimulgus frenatus Reich. ii. p. 357.

a. ♂. Kikuyu Forest, 27th June, 1902. (No. 327.)

123. BYCANISTES FISTULATOR (Cass.).

Bycanistes fistulator Reich. ii. p. 244.

a. ♀. Umtondea, 10th March, 1901. (No. 108.)

[This Hornbill was not uncommon at Umtondea, a locality near Malindi. It is noisy, and very wary.—*A. B. P.*]

124. LOPHOCEROS MELANOLEUCUS Licht.

Lophoceros melanoleucos Reich. ii. p. 249.

a. ♂. Kikuyu Forest, 20th May, 1902. (No. 294.)

[This Hornbill was not so often seen as the larger species. It keeps lower down in the trees, and its cries do not draw attention to its presence, as is the case with the larger bird. It is usually found in pairs, and often half a dozen pairs congregate together. Their cry resembles a very melancholy whine. I found these birds most numerous outside the thick belt of bush, where the larger species was not found.—*A. B. P.*]

125. IRRISOR JACKSONI Sharpe.

Irrisor jacksoni Reich. ii. p. 343 (1902).

a. ♀. Nairobi, 3rd June, 1902. (No. 301.)

Bill and feet red.

126. RHINOPOMASTUS SCHALOWI Neum.

Rhinopomastus cyanomelas schalowi Reich. ii. p. 347.

Rhinopomastus schalowi Neum. J. f. O. 1900, p. 221; Grant, Trans. Zool. Soc. xix. p. 433.

a. ♂. Takaungu, 2nd Dec. (No. 137.)

This species has been separated from the southern form of *R. cyanomelas* by Dr. Neumann; it is distinguished by having a very much wider white subterminal bar on the outer tail-feathers. Dr. Sharpe in his 'Hand-list' gives the range of *R. cyanomelas* as "S. Africa, north to Benguela and the Zambesi," and of *R. schalowi* as "East Africa, north to Mombasa."

[Fairly common, usually met with in pairs, creeping about the trunks of trees or dead branches.—*A. B. P.*]

127. Melittophagus oreobates Sharpe.
Melittophagus oreobates Reich. ii. p. 303.
a, *b*. Imm. Kikuyu Forest, 30th June, 1902. (Nos. 356, 358.)

Both these birds are in immature plumage, the feathers of the breast being widely tipped with green, while the band across the throat is wanting.

128. Melittophagus cyanostictus (Cab.).
Melittophagus cyanostictus Reich. ii. p. 308.
a. ♀. Takaungu, March 1901. (No. 118.)

[A common species. It breeds in holes in the sides of pits or in hollows in the ground.—*A. B. P.*]

129. Pœocephalus fuscicapillus (Verr. & Des Murs).
Pœocephalus fuscicapillus Reich. ii. p. 16.
a. ♀. Takaungu, 15th March, 1901. (No. 111.)
The native name for this bird is "Durrah."

130. Glaucidium perlatum (Vieill.).
Glaucidium perlatum Reich. i. p. 674.
a. ♂. Near Kilimanjaro, 20th Feb., 1902. (No. 249.)

[This was the only specimen seen; it was found asleep in a thorn-tree.—*A. B. P.*]

131. Astur tachiro (Daud.).
Astur tachiro Reich. i. p. 552.
a. ♀ imm. Takaungu, Feb. 1901.
b. Imm. Kikuyu Forest, 23rd April, 1902. (No. 248.)
These are both young birds and are conspicuously small.

The wing-measurement of specimen *a* is 8 inches, that of specimen *b* 8·3 inches. The tarsus in both examples measures 2·35 inches.

[No. 248 was obtained in the forest at the foot of Mt. Kilimanjaro.—*A. B. P.*]

132. MACHÆRHAMPHUS ANDERSSONI (Gurn.).

Machærhamphus anderssoni Reich. i. p. 596.

a. ♂ imm. Takaungu, Nov. 1900.

Mr. Percival was the first to discover the occurrence of this rare crepuscular Hawk in East Africa. It is closely related to the Honey-Buzzards (*Pernis*). It was observed at dusk on several occasions, flying very swiftly over Mr. Percival's house in pursuit of bats, but in the bad light it was extremely difficult to procure specimens.

133. CERCHNEIS NAUMANNI (Fleisch.).

Cerchneis naumanni Reich. i. p. 644.

a, b. ♂ ♀ et imm. Kikuyu Forest, 5th April, 1902. (Nos. 257, 258.)

Specimen 257 is an interesting example; it has almost attained the plumage of the adult male, the secondaries and greater wing-coverts being rufous barred with black, and the outer tail-feathers buff barred with black.

[During the plague-outbreak in Nairobi I had charge of a quarantine camp on the edge of the Kikuyu Forest. Every night at sundown a flight of small Hawks used to pass, and one night I managed to secure three birds, two of which belonged to this species.—*A. B. P.*]

134. CERCHNEIS AMURENSIS (Radde).

Cerchneis vespertina Reich. i. p. 634 (part.).

a. ♂. Kikuyu Forest, 5th April, 1902. (No. 259.)

Dr. Reichenow does not appear to recognise *C. amurensis* as distinct from *C. vespertina*, though it is a perfectly different species: the adults are easily distinguished by the colour of the under wing-coverts; in *C. vespertina* these are grey-blue, and in *C. amurensis* white.

This specimen was shot in company with two of the last-named species, flying at sunset.

135. Polyboroides typicus A. Smith.
Polyboroides typicus Reich. i. p. 531.
a. Ad. Takaungu.

136. Nyroca brunnea (Eyton).
Nyroca capensis Reich. i. p. 108.
a. [♂.] Lake Naivasha. (No. 3.)

There is an abnormally large patch of white feathers at the base of the lower mandible. The specimen is in moult.

[This and the two following species were common on Lake Naivasha.—*A. B. P.*]

137. Nettion punctatum (Burchell).
Anas punctata Reich. i. p. 120.
a. [♂.] Lake Naivasha. (No. 1.)

138. Pœcilonetta erythrorhyncha (Gm.).
Anas erythrorhyncha Reich. i. p. 118.
a. Ad. Lake Naivasha.

139. Ardea melanocephala Vig. & Childr.
Ardea melanocephala Reich. i. p. 380.
a. Ad. Takaungu, March 1901. (No. 110.)

140. Rhinoptilus bisignatus (Hartl.).
Rhinoptilus bisignatus Reich. i. p. 160.
a. ♂. Lake Njiri, 22nd Jan., 1902. (No. 221.)

[A few of these birds were seen in the salt deserts near Lake Njiri and at the foot of Mount Kilimanjaro. During flight the chestnut on the wings is very conspicuous.—*A. B. P.*]

141. Himantopus himantopus (Linn.).
Himantopus himantopus Reich. i. p. 207.
a. ♀ imm. Lake Naivasha. (No. 206.)

[The Black-winged Stilt was common on Lake Naivasha.—*A. B. P.*]

142. Totanus stagnatilis Bechst.
Totanus stagnatilis Reich. i. p. 220.
a. ♀. Lake Naivasha. (No. 204.)

[The Marsh-Sandpiper was plentiful on the shores of Lake Naivasha.—*A. B. P.*]

143. Machetes pugnax (Linn.).

Totanus pugnax Reich. i. p. 216.

a, b. [♂ ♀.] Lake Naivasha. (Nos. 205, 207.)

[Ruffs and Reeves were common on the shores of Lake Naivasha.—*A. B. P.*]

144. Podicipes capensis Licht.

Colymbus capensis Reich. i. p. 18.

a. ♂ juv. Mombasa, 26th Aug., 1900. (No. 7.)

This is quite a young bird, with the sides of the face and throat white, streaked and blotched with brown; the rufous feathers are just making their appearance.

145. Columba guinea (Linn.).

Columba guinea Reich. i. p. 401.

a. Mt. Kilimanjaro, 18th Jan., 1902. (No. 250.)

[Multitudes of these Pigeons came to drink at a water-hole near Kilimanjaro.—*A. B. P.*]

146. Excalfactoria adansoni (Verr.).

Excalfactoria adansoni Reich. i. p. 509.

a. [♀.] Mombasa, Sept. 1900. (No. 14.)

XXXII.—*Proceedings of the Fifth International Congress of Ornithologists.*

The Fifth International Congress of Ornithologists was held this year at Berlin under the presidency of Professor Anton Reichenow. A meeting, to enable the members who had already arrived to renew their acquaintanceship, was held on Sunday evening, the 29th of May, in the Landwehr Offizier-Kasino, Hardenbergstrasse, close to the Zoological Gardens, where most of the subsequent gatherings were also held. But the first formal meeting took place in the Grand Saloon of the Zoological Gardens in the forenoon of the 30th of May, when Professor Reichenow gave an excellent address on the progress of ornithology during the last one hundred and fifty years, and on its present state. Prior to the President's Address the election of officers for the meeting took place, hen the King of Bulgaria and the Princess Theresa of Bavaria were made Honorary Presidents of the Congress, and the following gentlemen were elected Vice-Presidents — Director Otto Herman, Count Arrigoni degli Oddi, Mr. Buturlin, Mr. H. E. Dresser, Professor Lönnberg, Dr. Svétlik, Baron Snouckaert van Schauburg, and M. Ternier. One of these, Mr. Buturlin, was unable to attend the Congress.

The Sections were arranged as follows :—

(i.) *Anatomy, Palæontology, Classification, and Geographical Distribution.* Presidents: the Hon. Walter Rothschild, Dr. E. Hartert, and Dr. Ménégaux.

(ii.) *Migration.* Presidents: Director Otto Herman, Dr. Reiser, and Dr. Parrot.

(iii.) *Biology, Oology, Acclimatization, and Aviculture.* Presidents: Amtsrat A. Nehrkorn, Dr. Büttikofer, and the Rev. F. C. R. Jourdain.

(iv.) *Bird-Protection.* Presidents: Freiherr von Berlepsch, Herr von Kazy, and Dr. Carl Hennicke.

(v.) *Poultry and Poultry-rearing.* Presidents: Herr Burchard, Herr Bähr, and Herr von Gontscharoff.

The meetings of these five sections commenced on Tuesday, the 31st of May, with a paper by Dr. Hartert (in Section i.) on the duties of scientific ornithologists, more especially with regard to the descriptions of new forms or subspecies.

The meetings were continued every day until the 4th of June. Amongst the papers read were the following :—The Hon. Walter Rothschild on the present and former distribution of the Ratitæ; Count Hans von Berlepsch on a revision of the Tanagridæ; Baron Harold Loudon on the birds observed by him in Transcaspia in 1908–1909; the Rev. F. C. R. Jourdain on birds observed in Corsica and in the Dobrudscha; Professor Koenig on a journey to the Sudan in the spring of the present year, where he obtained much information respecting the ornithology of that country; Mr. Otto Bamberg on the breeding of *Turdus ruficollis* in Mongolia; Dr. van Oort on a small collection of birds obtained by Dr. Lorentz in New Guinea, amongst which were examples of some species not yet described; and Oberlehrer W. Capek on a large series of Cuckoo's eggs, of which he possesses six hundred specimens.

Migration was very fully discussed in the second Section. Ritter von Tschusi zu Schmidhofen was unfortunately prevented by illness from attending the Congress, but sent a paper on the incursion of Crossbills in 1909. Dr. Hugo Weigold, of Heligoland, proposed to establish a Bird-observatory on that island, on the same lines as that of Rossitten, and gave a description of the island as it was in Gätke's time and as it now is. Capt. von Lucanus went fully into the question of the altitude which birds attain on migration, and stated his opinion that they do not travel at so great a height as had been surmised by Gätke. Director Otto Herman gave particulars of the work done by the Royal Hungarian Ornithological Bureau of Budapest, and Dr. Rössler, of Agram, gave an account of what has been done by the Croatian Ornithological Bureau. Dr. Thienemann, the Director of the Observatory at Rossitten, contributed particulars of the results obtained by marking different birds in order to ascertain their routes of migration, and where they go to in the winter. Dr. Jacob Schenck gave details of the investigations carried on at Budapest respecting migration, and remarks on the same subject were made by other Members.

Bird-protection was most fully discussed by Mr. Dutcher, Mr. James Buckland, Dr. Rörig, Dr. Heuss, and others, and Dr. Heuss and Mr. Buckland strongly advocated the necessity of establishing an international union for bird-protection in all countries. Frau van Hoorde spoke of ladies' fashions with regard to bird-protection, and Professor Schillings urged strongly the advisability of prohibiting the importation of the skins and feathers of birds for decorative purposes. After considerable discussion it was finally decided to constitute a permanent International Union for the protection of birds in civilized countries, and the following members were elected to serve on it:—*Austria*, Professor Schweder;

Belgium, Dr. Dubois; *Denmark*, Lieut.-Col. Mehrn; *France*, M. Ternier and Dr. Ménégaux; *Germany*, Baron von Berlepsch and Baron von Gebsattel; *Great Britain*, Lord Avebury and Mr. Buckland; *Holland*, Mr. F. van Vollenhoven and Dr. Ritzma-Bos; *Hungary*, Mr. Chernel von Chernelháza; *Italy*, Count Arrigoni degli Oddi; *Norway*, Oberhofstallmeister Sverdrup; *Russia*, Mr. Stoll; *Sweden*, Professor Lönnberg; *United States*, Mr. Dutcher and Dr. Palmer.

In Section 5 three papers were read; of these that by Herr Dozent B. Düringen was important, as it treated the question of poultry-rearing from a scientific point of view.

On Saturday the 4th of June, after some discussion, it was decided that the next International Ornithological Congress should be held at Sarajevo, Bosnia, in 1915, under the Presidency of Herr C. Reiser, of the Bosnian National Museum of Natural History, of which he is the Keeper.

On the 30th of May the German Ornithological Society arranged a steamboat-excursion from Spandau to the Havelsee and Wannsee, and gave an excellent supper at the Hôtel Bürgers Hof opposite the Barbelsberg Park. On the 1st of June the city of Berlin gave an entertainment at the Rathaus, which was very fully attended. On the 2nd of June the Berlin Zoological Society offered a lunch at the Zoological Gardens to the Members of the Congress, and a supper was also given there on the following evening. Besides these expeditions others were arranged to the Spreewald, to Baron von Berlepsch's bird-protection station at Schloss Seebach, and to the Kurische Nehrung, under the guidance of Dr. Thienemann. Moreover, all Members of the Congress were offered free admission to the Zoological Gardens during their stay in Berlin.

It need scarcely be added that the whole proceedings were so well carried out that the Fifth International Ornithological Congress was unanimously pronounced to have been a great success.—H. E. D.

XXXIII.—*The Report on the British Museum for* 1909 *.

We have received a copy of the official Report on the British Museum for the year 1909, which contains a statement of the progress effected in the arrangement and description of the collections in the Natural History Museum at South Kensington, and an account of the additions made to it in that year.

It is stated that preparations illustrating the classification of Birds have been added to the exhibited series, and we may call special attention to the specimens of the structure of the Order Ratitæ, which are exhibited in the first compartment on the right-hand side of the entrance to the Bird-Gallery. It will be observed that the Tinamous are placed in that Order here.

The mounted series of Birds exhibited in the British Saloon has now been completed, and this, we are told, is largely due to the generosity of Mr. Rowland Ward, who has presented beautifully mounted examples of a large number of species.

The mounting of the series in the General Gallery has also been continued, and the old and faded specimens of the following families have been replaced by finely mounted examples, the work of Mr. Rowland Ward:—*Galbulidæ*, *Bucconidæ*, and a considerable number of Dendrocolaptine Birds. The Gould Collection of Humming-Birds, with the exception of the cases on the main staircase, has been removed from the East Corridor to the Vestibule leading from the Central Hall to the Fish Gallery. The vestibule has been fitted with shelves for the reception of smaller cases, and the whole series is in course of being re-labelled on a new and improved plan. New and revised editions of the 'Guide to the Gallery of Birds' and 'Guide to the Nesting Series of British Birds' have been published. Much assistance has been received from Mr. David A. Bannerman, who has spent many weeks naming, registering, labelling, and incorporating specimens.

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* For an account of the Report for 1908, see 'Ibis,' 1909, p. 691.

He has also written a paper on a large collection of birds formed by Mr. G. W. Bury in N.E. Somaliland.

Good additions have been made to the osteological series, and among them many preparations of the skulls of nestling birds. Much curatorial work has also been necessary in this part of the collection. The arrangement of the specimens in spirit is unsatisfactory, owing to the lack of adequate space for storing them.

The accessions to the Bird-collection during the past year were 4430 in number. Of these, the most noteworthy were as follows :—

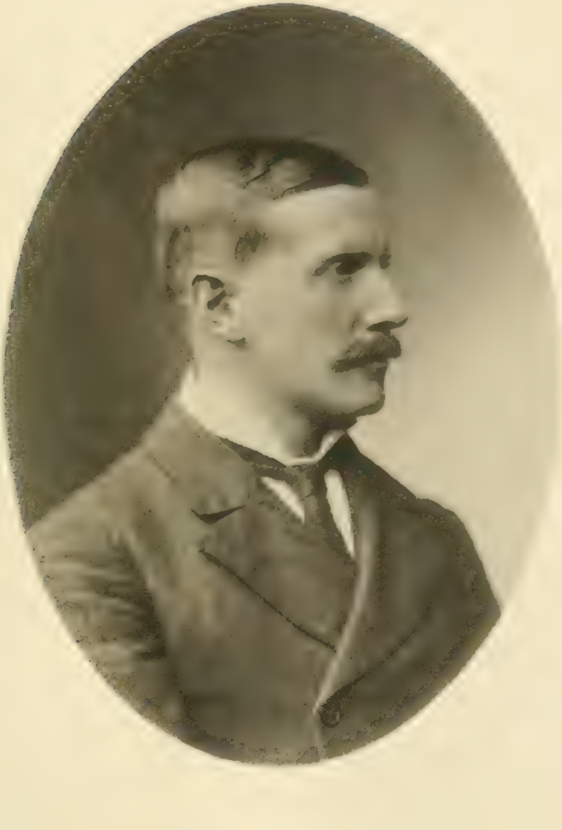
One hundred and eighty birds from Cyprus (collected by Mr. C. B. Horsbrugh); obtained by purchase. Thirty-six birds and fifteen eggs from Corsica; collected and presented by Major Trevelyan. Five hundred and twenty-three birds from Turkestan (collected by Mr. Douglas Carruthers); purchased. Sixty-six birds and thirty-six skeletons from Asia Minor (collected by M. A. Robert); purchased. Four hundred and ninety birds from Manchuria; purchased. Twenty-two birds from the Philippine Islands, including examples of ten species new to the Collection; purchased. Fifty-two birds from Christmas Island, Indian Ocean (collected by Dr. C. W. Andrews); presented by Sir John Murray, K.C.B., F.R.S. Thirty-eight birds from Central Formosa, including a male example of the very rare Pheasant *Calophasis mikado,* collected by Dr. A. Moltrecht; purchased. One hundred and nine birds from the Five-finger Mountains, Hainan (including the types of *Pitta douglasi* and *Tephrodornis hainanus*); collected and presented by Mr. Robert Douglas. Two hundred and thirty-four birds from Travancore, collected and presented by Surgeon-Major W. Fry. Fourteen birds and one hundred and thirty-nine eggs from the Andaman Islands (collected by Mr. B. B. Osmaston); purchased. Five hundred birds from Angola (collected by Dr. W. J. Ansorge); purchased. One hundred and twelve birds from Cameroon (collected by Mr. G. L. Bates); purchased. Fifty-two birds, one nest, and four eggs from the Orange River Colony; presented by Mr. Donald Gunn. Seven hundred and twenty-five birds from N.W. Rhodesia, including the type of *Paludipasser locustella*, a new genus and species, discovered by Mr. Sheffield A. Neave; purchased. Fourteen birds from South America, including examples of ten species new to the Collection; presented by the Director of the Goeldi Museum, Para. Seventy-five birds from Venezuela (collected by Mr. J. Wayman): purchased. The type of *Troglodytes cobbi*, two nests, and thirty-four eggs from the Falkland Islands; collected and presented by Mr. A. F. Cobb. Thirty birds from South America; presented by Lady Gipps. Sixty birds from Australia; presented by Lady Gipps. One hundred and thirty-nine eggs and two nests from Australia (collected by Mr. T. Carter): purchased. One hundred and twenty birds from Bougainville Island and New Guinea (collected by Mr. A. S. Meek): purchased. Forty-nine birds from New Zealand (collected by Mr. Robin Kemp); purchased.

XXXIV.—*Boyd Alexander and his Ornithological Work.*

By W. R. Ogilvie-Grant, F.Z.S., M.B.O.U.

(Plate XII.)

The news of the tragic fate of Boyd Alexander, which reached London on the 24th of May, must have caused profound regret over the whole civilised world, as he was well known through his achievements both as a daring traveller and an accomplished writer. By none, however, will his loss be more deeply and truly mourned than by the British Ornithologists' Union, of which he was a distinguished and highly popular member. His charming personality and his character, so delightfully simple and so extraordinarily brave, endeared him to all who knew him, and his useful and valuable life could ill be spared. The first report of his death contained few details, but the news having come through official sources left no room for doubt that he had met with a violent end on the 2nd of April, while travelling on the confines of Wadai to the



BOYD ALEXANDER.

north-east of Lake Chad. He had already passed through so many perils unharmed that he appeared to bear a charmed life, and it seems a terrible irony of Fate that the career of this most successful and intrepid traveller should have been cut short by the hand of a boy. The following account of the tragedy has now been received from Lieutenant Childers Thompson, commanding at the British post of Maifoni, in the Lake Chad district, with whom the late explorer stayed for a month.

"You will have received by this time the bare announcement that Boyd Alexander was killed near Darfur. I will now give you the details. He was delayed for a long time at Abeshir, in Wadai, owing to the French reverse at Nassalit having brought about a disturbed condition of the country. Finally, two months ago, leaving Abeshir, he proceeded on his journey, and along with his Portuguese collector José Lopez marched in a north-easterly direction, arriving safely at Tama, a place that is under Ali Dinar of Darfur (presumably a chieftain owing allegiance to the Anglo-Egyptian Government). They reached the place late at night, and on their arrival the local chief or king summoned them to his presence. To this request Alexander replied that he would see the king on the following morning.

"The explorer and his companion were encamped under some trees outside the town, and had just finished their evening meal when they were suddenly surrounded by a band of people, who declared their intention of taking Alexander to their king. One of the men then laid hands on the British officer, who naturally pushed him off. Thereupon a small boy, who was standing by, seized a gun and discharged it at Alexander, who fell instantly, and the crowd then set upon him and despatched him. Four of the natives seized José and proceeded to wrench a ring from his finger. In order to get free José said he would himself remove another ring which they wanted, but the moment he got his hands clear he seized his gun, fired two shots at his assailants, and, jumping on his horse, succeeded in escaping. Before this Alexander was dead, and the majority of the natives, in their excitement, did not pay much attention to his companion and moved back to the town.

"The bad luck of the whole thing was that two days after the explorer's murder Ali Dinar of Darfur, to whom Alexander had sent his boys (presumably to announce his arrival and to ask for guides), sent back an escort along with the carriers. The latter had been well received by Ali Dinar, who had given them presents and had provided the escort for the British officer, to give him a safe passage across Darfur. Two days later would have made all the difference. The attitude of the Tama people was doubtless due to the fact that they had had trouble with the French before, and hearing of the arrival of an unknown white man at their town, expected further hostilities."

Thus, in the very prime of his life, having already at the early age of 37 covered himself with honour and glory, this splendid man was done to death. All those who had the privilege of knowing him will easily realise that Alexander's place both as a great traveller and as a field-naturalist of exceptional ability will be hard to fill; and to those who could claim him as a friend his loss must seem irreparable.

Boyd Alexander was the eldest son of Lt.-Col. Boyd Francis Alexander, of Swifts Place, Cranbrook. He was one of twin boys, born on the 16th of January, 1873. As it was doubtful whether the younger would survive the early hours of infancy, the Vicar was summoned hastily to christen the children, and the ceremony was performed in an old silver sugar-basin which is a family heirloom. The fears of the doctor, however, were fortunately not fulfilled, so the twins grew up together through childhood and school-days, while their ways did not part till at twenty years of age they entered different battalions of the Rifle Brigade (Militia). It was then that Boyd's taste for travel began to develop, and soon his expeditions kept him the greater part of his time away from England.

From earliest boyhood he shewed an extraordinary keenness for natural history. Perhaps this passion for collecting, this thirst for excitement in birds-nesting, trapping, or handling the forbidden gun are common more or less to all boys, but young Boyd Alexander's devotion was more than these and shewed itself in his precocious knowledge of such books as White's " Selborne " and " Bewick," in the wonderful neatness and method of the arrangement of his egg-collection, and in a systematic diary of the migrations and habits of the birds in the neighbourhood of his home.

At school he was not particularly fond of games, but, although doubtless he employed many a trick to get off and to range the country-side for birds' nests, he was by no means unathletic or unmanly, for he represented Radley College in the public schools boxing-competition the same year that his twin brother, Robert, was her champion for gymnastics.

An incident of Alexander's boyhood is perhaps worth relating as characteristic of the future explorer and ornithologist, in that it shews in the boy those qualities of pluck and devotion to a hobby which were such conspicuous features in the nature of the man. He could not have been more than eleven at the time when he and his two brothers had come home for the holidays, and all, wild with the joy of their first day of freedom, were scouring the place in an eager search for birds'-eggs. Not much luck had attended their efforts, though many risks of broken limbs had been taken, until evidence of a swallows' nest was discovered inside the roof of a disused barn. The door was locked, and how to force an entrance was the problem still occupying the energies of the brothers outside, when to their surprise an exulting shout came from Boyd up in the roof, and to this day it is not known how he had effected an entrance. But his triumph was not destined to last long, for just as he had reached his hand up into the nest to count the eggs, there was a horrible crash among the rafters, quickly followed by a sickening thud upon the ground. Then for a few moments, that to the brothers outside seemed an age, there followed a dead silence presently broken by moans. Frantically they kicked at the door and tore at the boarding in order to get to his rescue, but with no success, and to add to their horror, through a crack in the boards they could see him lying with his head in a pool of blood. Fortunately they sighted a labourer who was working in a neighbouring field, and at length with his help the door was broken open and poor Boyd was brought out and laid upon a heap of straw. Water was fetched from a well near by, and after a little while he revived. It was then seen that in falling he had struck the rafters with his jaw and that three of his teeth were broken off. It was close on lunch-time and they were about half a mile from home. His brothers urged him to let one of them run back and bring the pony cart, but he would not hear of it, fearing that if his mishap became known to the elders, a stop would be put to their independence and all their fun spoilt for the future. So he struggled home in his shaken and crippled state and actually made the attempt to endure his pains through lunch as if nothing had happened. But his dazed condition and battered face at length attracted notice, though not before he had won the day for his brothers and himself, for the serious nature of his accident was never realised by his parents, their chief fear being lest his appearance should be permanently damaged. So this was by no means the last of the adventures the boys had in the pursuit of their pet hobby.

Side by side with his taste for natural history another excellent boyish characteristic was developed in the form of a steadfast hero-worship, the objects of which were never dethroned from his regard, but remained his pattern heroes to the end of his life. These were Napoleon and General Gordon. In viewing the record of Alexander's achievements, so remarkable for so young a man and one that has placed him among the great explorers of history, and remembering this early hero-worship of his, it is interesting to observe how "the child was father to the man." For this was the inspiration which largely helped him in after years to overcome well-nigh insurmountable difficulties. When alone in the midst of dangers, and fighting the leagued forces that Fate arrayed against him, of savage men, and the no less fearful foes of fever, famine, and flood, like the fighters of old he carried his gods into the battle, and many must have been the times when he took heart from his remembrance and intimate knowledge of the lives of these great ideals, these heroes of his boyhood.

Interesting witnesses to his veneration for these great dead remain round the walls of his museum at Wilsley, in an almost exhaustive collection of their histories and lives and in many fine old Napoleonic engravings.

Although Boyd Alexander's name will go down to posterity pre-eminently as an explorer, from the results of whose travels has been gathered much store of knowledge in various sciences, it must be interesting to ornithologists to know that it was his passion for their own special science that formed the mainspring of all his achievements. In his book, which relates the history of his great journey, 'From the Niger to the Nile,' he writes:—" Every explorer looks upon the map of that part of the world which particularly calls him, and endeavours to find a spot that still affords opportunity for the special powers he may possess for finding out the secrets that it hides. The mountaineer sets his heart upon the ascent of some unconquered height . . . . Other travellers distinguish themselves in that form of exploration which depends for its success upon a great knowledge of peoples and languages . . . . The humanitarian follows the map as it is expressed by the distribution of the tribes ; while geographers leave the featureless desert on one side and take their ways by hills that make beautiful undulating shadings, and by rivers that embroider with blue veinings, and by lakes that shine like jewels—upon the map . . . . All these facts [referring to the little-known region of Lake Chad] attracted me, and there was the character of the fauna to be ascertained, with the hope that a locality, showing geographical peculiarities, might also reveal marked differences in its fauna. This last idea naturally took a strong hold on me, for I will now confess that my ruling passion is ornithology, and all my exploration might be described as taking the course pointed out by the birds."

At an early age Alexander began to form a local collection of the birds of his native county (Kent), and while his father remained at Swifts Place these occupied a large room, which was known in the household as 'Boyd's Museum.' When some years later Col. Alexander moved into his other house, Wilsley, Boyd found that his rapidly increasing collections necessitated the building of a special museum, and he constructed a capital house in the grounds. Ranged round the walls of this building may be seen a series of cases containing beautifully mounted examples of Kentish Birds, many of them of great local interest and rarity. The middle portion of the building is occupied by cabinets containing all his splendid collection of African bird-skins, and including the priceless type-specimens of the many novelties he has described.

His studies on the birds of Kent were embodied in the section on "Birds" in the Victoria History of Kent, which he wrote during the intervals of his earlier journeys.

Turning now to his work as an ornithologist the following is a brief resumé of his principal writings.

In 1895 we find his first published note in the 'Zoologist,' where he recorded an example of Harcourt's Storm-Petrel (*Oceanodroma castro*), which had been picked up on the beach close to Littlestone, on the coast of Kent. It was the first British example of this species. In the spring and autumn of 1896 much of his time was spent on the coast of Kent studying the nesting-habits of the birds and their migrations, and his observations were published in three papers which appeared in the 'Zoologist' of that year, under the titles "Ornithological Notes from Romney Marsh and its Neighbourhood" (pp. 246–253), "Notes on Birds in Kent" (pp. 344–349), and "Ornithological Notes from Rye" (pp. 408–416). Many of these observations are especially valuable as recording the movements of the various species on that part of the coast of Kent.

In January of the following year he made his first expedition to the Cape Verde Islands, being accompanied by his friend Mr. John Duncan and two professional taxidermists. The party landed at São Vicente on February the 10th, and spent about four months in exploring the various islands of the group. Materials were thus gathered for his excellent and exhaustive paper on the Avifauna of the Cape Verde Islands which was published in 'The Ibis' for 1898, pp. 74–118. Some new species rewarded the maiden efforts of the explorer, the most important being a curious Lark (*Spizocorys razæ*), only met with on the little desert island of Raza, which occupies an area of some three square miles. Other notable species met with were the Desert Lark (*Pyrrhulauda nigriceps* Gould), the Cape Verde Shearwater (*Puffinus edwardsi* Oustal. = *P. mariæ* Alexander), the White-breasted Frigate-Petrel (*Pelagodroma marina* (Lath.)), and Harcourt's Storm-Petrel (*Oceanodroma castro* Harcourt, = *O. cryptoleucura* Ridgw.), all of which were found to be breeding on some of the small rocky islands.

Finding that his first visit to the islands had been too late for the breeding season of most of the species, he paid a second visit to the Cape Verde Islands in 1897 for the special purpose of obtaining eggs, and his further notes on the group were published in 'The Ibis' for 1898, pp. 277–285.

His next expedition took him to the Zambesi region, when he formed one of the nine members of Major Gibbons's 'Cape to Cairo' Expedition, which set out from Chindi on the 18th of July, 1898. In company with his taxidermist Ramm he explored the lower part of the Zambesi and its tributary, the Kafuè River, and formed a large collection of nearly 1000 bird-skins representing 212 species, several of which proved to be new. The results of this important undertaking were fully described by Alexander in 'The Ibis,' 1899, pp. 549–583, 1900, pp. 70–109, 424–458.

No sooner had he completed his work on the Zambesi Collection than he left England for service with the Gold Coast Constabulary, and took part in the relief of Kumassi in 1900, for which he obtained the medal and clasp. On this expedition he was accompanied by José Lopez his Portuguese collector, who had returned with him as a boy from the Cape Verde Islands, and who remained his faithful adherent during all his subsequent wanderings in Africa. As the relief-column advanced on Kumassi, José slowly followed behind and formed excellent collections of birds at each station on the lines of communication. After a three hours' fight the Ashantis were driven into the forest and the column entered the beleaguered fort.

An amusing incident shewing how Alexander's passion for ornithology dominated all other interests was related to the writer by one of the other officers who accompanied the column. Shortly after the occupation of Kumassi, Boyd being nowhere to be found, General Sir James Willcocks instituted a search for him and eventually he and José were discovered in their tent outside the fort, though the surrounding forest was still swarming with hostile Ashantis. On being asked to explain his reason for running such risks, he said that if he remained in the fort he was sure to be called on for duty, whereas in his present camp he was less likely to be disturbed and had excellent opportunities for increasing his bird-collection! On leaving Kumassi he was sent with a column of Haussas to Gambaga, the headquarters of the northern territories, and there he met with many interesting forms of bird-life, including several rare Desert Larks, such as *Heliocorys modesta* and *Mirafra erythropygia*.

On leaving Gambaga in May 1901 he trekked to Salaga and thence on to the River Volta, finally reaching the coast at Accra. An account of the fine collection of birds formed during this Expedition, numbering nearly 1100 specimens, will be found in 'The Ibis,' 1902, pp. 278–333 and 355–377. Several species proved to be new to science, including a Honey-Guide (*Indicator willcocksi*) which was named in honour of General Sir James Willcocks, while many of the other specimens obtained enabled the author to add considerably to our knowledge of the geographical distribution of the birds in this little-known area.

On his return to England Alexander was offered and accepted a commission in the Rifle Brigade in which he had already served as a Militiaman, but his heart was not really in soldiering, except in so far as it enabled him to visit unknown lands in search of birds. In 1902, when he had completed the description of his Gold Coast collections, we find him organising an expedition to visit the little-known island of Fernando Po. This was one of his most successful undertakings, for he ascended the Pico Santa Isabel, which attains an altitude of 10,800 feet, and discovered a large number of new species, including the remarkable long-tailed Tree-Warbler (*Urolais mariæ*) representing a new genus and species. With his Portuguese collector José Lopez, who had developed the most remarkable talent both for shooting and preserving small birds, he arrived at Fernando Po on 27th October, 1902, and remained on the island till the middle of December, when his leave being nearly up he was obliged to return to England. Describing the ornithological results of this Expedition he writes:—"The work of the whole expedition resulted in a series of nearly 500 specimens representing 3 new genera and 103 species, of which 35 have proved to be new to science. I owe this remarkable success to having traversed the high ground, my predecessors having confined their attentions to the lowlands. The wealth of bird-life on the island is indeed wonderful, and proportionally larger than in the forest-region of the adjoining West Coast." A full account with coloured figures of some of his more remarkable discoveries on this occasion will be found in 'The Ibis,' 1903, pp. 330–403.

Boyd Alexander's next scheme was of a much more ambitious character than any of his previous undertakings, and is now famous all over the world as the Alexander-Gosling Expedition, which crossed Africa from the Niger to the Nile and explored the countries bordering Lake Chad. The whole journey occupied three years, from 1904 to 1907, and resulted in the tragic deaths of both his companions, his brother Capt. Claud Alexander (Scots Guards) and Capt. G. B. Gosling (Rifle Brigade). Undaunted by these terrible misfortunes and accompanied only by his faithful Portuguese collector, José Lopez, Alexander pushed on across Africa by way of the Shari and Welle Rivers, and surmounting all dangers and difficulties eventually arrived safely at Khartum. The details of this great journey are still fresh in the memory of most of us, the story having been graphically told by Alexander in two large volumes bearing the title 'From the Niger to the Nile.'

On the 13th of May, 1907, he gave an account of this Expedition before the Royal Geographical Society at Burlington Gardens, where he received a most enthusiastic reception, and his graphic account of his journey with its triumphs and misfortunes, told in the simplest language, will not easily be forgotten by those who were present. [*Cf.* Geographical Journal, xxx. pp. 119–152 (1907).]

For his geographical discoveries Alexander received the Gold Medal of the Royal Geographical Society of Antwerp in 1907, and the Gold Medal of the Royal Geographical Society of London in 1908; he was also elected an Honorary Member of the Royal Geographical Society of Scotland in 1907.

The ornithological results of this great journey have not yet been published, for though Alexander had partly written two papers on the Birds, he had finished neither of them when he started on this last journey. The new species, however, some 29 in number, were described in the Bulletin of the British Ornithologists' Club, volumes xix., xxi., and xxiii.

One of the memorable incidents of this Expedition was the capture of an adult Okapi, which after being hunted for many days was shot by José in the Welle Forest. This interesting specimen was mounted by Messrs. Rowland Ward & Co. and presented by Alexander to the Natural History Museum, where it may now be seen in the Eastern Corridor, over the Great Hall.

Boyd Alexander's name will ever be associated with the history of Lake Chad, and it was near that Lake that he ultimately met his fate and where his body lies buried. On his return from the Alexander-Gosling Expedition he found that his twin brother Robert was constructing a lake on his father's estate near Cranbrook. To commemorate the event, it was determined to make it in shape as nearly as possible a miniature facsimile of Lake Chad. The Lake at Swifts Place is now a very exact representation of the original, as determined by Boyd's Survey, and characteristic features have been added such as the boat-house and duck huts upon the banks and the island, which resemble the reed-built huts of the Buduma tribe inhabiting Lake Chad.

Of his last journey we can say but little. He visited the Islands of San Thomé, Principe, and Annabon, in the Gulf of Guinea, on each of which he made a complete collection of birds, and, after touching at Fernando Po, crossed to Cameroon. There he ascended the Peak and made extensive collections, one of his most important discoveries being a remarkable species of Francolin (*Francolinus camerunensis*) in which the plumage of the two sexes is entirely different. From his last letter to the writer, dated near Victoria 30th of April, 1909, the following passage is extracted :—"I have worked pretty hard on the peak of Cameroon and I do not think I have ever had more difficult collecting. The forest is so thick that I lose nearly half of what I kill. I had an appalling time of it on the mountain during the first night of the earthquake. My camp was at an altitude of 8,000 feet. At each boom from the mountain above us the ground danced like a live thing and torrents of stone poured down the hill not half a mile from where we were camped, forest-trees came crashing down and snapped in two like match-sticks, and the cries of terrified monkeys flying before the torrent added, if that was possible, to the dreadful scene. I abandoned my camp at three in the morning and only just in time, for an hour later the place was destroyed."

After leaving Cameroon he made his way once more to Lake Chad and finally, as has already been told, started on his last journey through Wadai.

He now lies beside his brother Claud, his body having been recovered and brought back to Maifoni, a British Post near Lake Chad.

List of Papers etc. by the late Boyd Alexander.

1896.

Zoologist.

On a new British Petrel, p. 167.

Ornithological Notes from Romney Marsh and its neighbourhood, pp. 246–253.

Notes on Birds in Kent, pp. 344–349.

Ornithological Notes from Rye, pp. 408–416.

1898.

Zoologist.

Little Gull in Kent, p. 216.

The Ibis.

An Ornithological Expedition to the Cape Verde Islands, pp. 74–118.

Further Notes on the Ornithology of the Cape Verde Islands, pp. 277–285.

Bulletin B. O. Club.

On Birds from the Cape Verde Islands, vii., p. xxvii.

1899.

The Ibis.

An Ornithological Expedition to the Zambesi River, pp. 549–583.

Bulletin B. O. Club.

On his Expedition to the Zambesi, viii., p. xlviii.

Exhibition of examples of *Cinnyris shelleyi*, viii., p. lv.

Description of *Chlorodyta neglecta*, x., p. xvii.

1900.

The Ibis.

An Ornithological Expedition to the Zambesi River, pp. 70, 109, 124–158.

1901.

Bulletin B. O. Club.

On new or rare species of Birds from the Gold Coast Hinterland, xii., p. 10.

Description of a new species of Nightjar, *Caprimulgus sharpei*, xii., p. 29.

1902.

The Ibis.

On the Birds of the Gold Coast Colony and its Hinterland, pp. 278–333, 355–377.

1903.

The Ibis.

On the Birds of Fernando Po, pp. 330–403.

Bulletin B. O. Club.

Descriptions of thirty-three new species and two new genera of Birds from Fernando Po, xiii., p. 33.

A Genus and four new species of Birds from Fernando Po, xiii., p. 48.

Description of *Heterhyphantes melanogaster* ♂, xiii., p. 49.

Glareola melanoptera in Sussex, xiv., p. 17.

A new species of Flycatcher from Fernando Po, xiv., p. 17.

1907.

From the Niger to the Nile. By Lieut. Boyd Alexander. 2 vols. 8vo, London, 1907.

Bulletin B. O. Club.

A short account of his three years' journey across Africa, xix., p. 46.

Exhibition and description of six new species of Birds, xix., p. 46.

Description of a new species of *Calamocichla*, xix., p. 63.

Exhibition of three new species of Birds, xix., p. 88.

Descriptions of two new species of African Birds, xix., p. 104.

From the Niger, by Lake Chad, to the Nile. By Boyd Alexander, Lieut. Rifle Brigade. Geogr. Journ. xxx., p. 119 (August 1907).

1908.

'Birds of Kent' in the "Victoria History of the County of Kent," vol. i., pp. 267–301. (1908.)

Bulletin B. O. Club.

Description of a new species of Lark-heeled Cuckoo (*Centropus neumanni*) from the River Welle, xxi., p. 78.

Exhibition of eight new species of African Birds, xxi., p. 88.

Remarks on certain species of *Indicator*, xxi., p. 91.

Exhibition of a new species of Flycatcher (*Batis chadensis*) from Lake Chad, xxi., p. 105.

Exhibition and description of new species of African Birds, xxiii., p. 15.

Exhibition of rare Birds obtained by him on his Expedition across Africa, xxiii., p. 16.

Descriptions of two new species of Birds from Lake Chad, xxiii., p. 33.

Description of a new species of Red-winged Starling (*Amydrus neumanni*) from Northern Nigeria, xxiii., p. 42.

1909.

Bulletin B. O. Club.

Description of a new species of Grey Parrot (*Psittacus princeps*) from Princes Island, West Africa, xxiii., p. 74.

Descriptions of three new species of Birds, *Francolinus camerunensis*, *Anthus camerunensis*, *Cryptolopha camerunensis*, from the Peak of Cameroon, xxv., pp. 12, 13.

XXXV.—*Notices of recent Ornithological Publications.*

[Continued from p. 565.]

73. *'Annals of Scottish Natural History.'*

[The Annals of Scottish Natural History. A Quarterly Magazine, with which is incorporated the 'Scottish Naturalist.' April, July, 1910.]

Fair Isle continues to hold its own as a field for the northern ornithologist and the student of migration, while it appeals to us all strongly as an outpost towards the boreal regions. We are, therefore, always glad to read Mr. Eagle Clarke's annual reports, of which the fifth is in the April number of this magazine. He promises us a separate and full account of the birds of the Isle shortly, and meanwhile recounts as new for 1909 the following six species:—Crossbill ('Annals,' 1909, p. 215; 1910, p. 54), White-spotted Bluethroat, Pink-footed, Bernacle, and Brent Geese, and Grey Phalarope. The Crossbills appear to be representatives of a slender-billed race from the far north of Europe and Siberia. With regard to the record of the breeding of the White Wagtail, we may draw attention to that of Mr. J. H. Dixon in his work on 'Gairloch in Ross-shire.' The White-spotted Bluethroat has never before been obtained in Scotland, and only on three occasions elsewhere in Britain.

Other communications to the April number are those of Mr. H. B. Watt on Scottish Heronries, with additions to and corrections of his former paper (1908, p. 218), and of Mr. H. S. Gladstone on a specimen of the American Bittern shot at Loch Martnaham in Dumfriesshire in 1898, the newspaper report of which he finds in a scrap-book of the late Sir William Jardine, belonging to Mr. Harvie-Brown, who called his attention to the entry. Finally, Mr. W. Evans, in reference to his note ('Annals,' 1899, p. 14) on the supposed eggs of the Wood-Sandpiper taken near Elgin by Mr. Thurnall in 1853, quotes from letters of Sir Edward Newton to Professor Alfred Newton, which clearly shew that the finder was mistaken in his identification of the eggs. In the 'Zoological Notes' we should mention those on Crossbills from the north-east coast and on the Great Spotted Woodpecker by Mr. Harvie-Brown;

on a visitation of Greenland Falcons by the same and Mr. Eagle Clarke; and on the rare hybrid between the Blackcock and Capercaillie, with some remarks on the latter species in East Lothian.

In the July part we have a skilfully drawn-up Report on Scottish Ornithology for 1909 by those energetic lady-workers Misses Baxter and Rintoul, who take the place this year of Mr. Laidlaw. It will be remembered that they themselves added a new species to the British list in 1909 (*Saxicola pleschanka* from, the Isle of May), but they call our attention here to many other rare birds, too numerous to mention, including *Phylloscopus superciliosus* on the Scottish mainland, *Oriolus galbula*, *Zonotrichia albicollis* (Flannan Islands), *Falco candicans*, *Tadorna casarca*, and numerous species from Fair Isle and the Isle of May. A feature in the Report is the division into sections which deal with different subjects, such as extension of breeding-range, nesting of the species, migration, and so forth ; while the occurrences in winter are a welcome addition to the usual spring and autumn records. Among the latter the great invasion of the Crossbill into Britain is duly chronicled and discussed.

The Pentland Skerries have furnished a specimen of the Rock-Thrush, which was sent to the Royal Scottish Museum; this, Mr. Eagle Clarke says, is only the second time that *Monticola saxatilis* has occurred in Britain, if we except doubtful reports. In the 'Zoological Notes' for July we find mention of a Chough from Peeblesshire, and an American Yellow-billed Cuckoo from Colonsay, besides further occurrences of the Crossbill.

74. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. January, April, July, 1910.]

In the January number Dr. C. W. Townsend and Mr. A. C. Bent publish some notes on the Birds of Labrador, supplementary to the work on that country by Townsend and Allen in the 33rd volume of the 'Proceedings of the Boston Society,' and to further notes in 'The Auk,' vol. xxvi. An account is given of the condition of the avifauna of the southern coast in the spring of 1909, and three species are added to the Labrador list (3 plates). Mr. Ruthven Deane, in continuation of his interesting articles on Audubon, furnishes us with letters from that great ornithologist and Dr. Ingall on the Labrador trip of 1833, when much good work was done, but no new species were discovered; Mr. J. H. Sage publishes his Report on the twenty-seventh "stated meeting" of the A. O. U.; and Mr. L. B. Bishop describes two new subspecies (*Numenius americanus parvus* from Western Canada, and *Molothrus ater dwighti*, Saskatchewan to N. Dakota).

In the April number we have three articles in memory of J. C. Merrill, C. Aldrich, and R. B. Sharpe, with portraits, by Mr. W. Brewster, Mr. R. Deane, and Dr. J. A. Allen respectively. Mr. L. J. Cole also records the progress made in the "tagging" of wild birds.

The July number contains a paper of considerable length on bird-photographing in the Carolinas, by Messrs. B. S. Bowdish and P. B. Philipp, with three plates of Terns, the Black Skimmer, the Florida Cormorant, and the Florida Gallinule.

Of papers more especially distributional contained in the three numbers, Mr. J. E. Hess discusses the species found within a ten-mile radius, near Philo, in Illinois; Mr. J. C. Wood the winter birds of 1908–9 in Wayne Co., Michigan; Mr. G. Eifrig the same at Ottawa—with some interesting observations on the habits; Messrs. A. H. Wright and A. A. Allen write on the increase of "Austral Birds" at Ithaca; Mr. W. F. Henninger on his experiences in Ohio (plate); Messrs. N. A. Wood and A. D. Tinker on the rarer species of Washtenaw Co., Michigan; Mr. E. R. Warren on the birds of Chaffee Co., Colorado; Mr. G. C. Embody on those of Ashland, Virginia; Mr. J. F. Ferry on those of Saskatchewan (3 pls.); Mr. R. W. Chaney on those of Hamlin Lake, Michigan; Mr. S. S. Visher on those of Pima County, Arizona; and Mr. A. H. Howell on those of the summer in Kentucky and Tennessee.

In the January number Mrs. F. M. Bailey records her experiences of the breeding of *Icterus nelsoni*, the Palm-leaf Oriole, and gives three pretty figures of the nest; and in April Dr. Townsend writes on the courtships of the Golden-Eye and Eider Ducks, while Mr. R. F. Miller notes an increase of the Florida Gallinule near Philadelphia. In July Mr. H. W. Henshaw furnishes an article, which will interest students of the subject, on the "Migration of the Pacific Plover (*Charadrius dominicus fulvus*) to and from the Hawaiian Islands," which is followed by a second on the "Migration of the Canada Goose in Eastern Massachusetts," by Mr. J. C. Phillips. Mrs. C. J. Stanwood also writes on the Black-throated Green Warbler and its nesting-habits (2 pls.); Mr. W. F. Henninger on Henslow's Sparrow in Ohio (pl.); and Mr. W. Brewster answers Dr. Dwight on the "Resurrection of the Red-legged Black Duck."

Mr. R. Ridgway's remarks "Concerning Three erroneous Georgia Records" (p. 88) should also be noted by students of American ornithology in particular.

75. '*The Avicultural Magazine.*'

[Avicultural Magazine. Third Series. Vol. i. Nos. 5–9 (March–July 1910).]

In these numbers we have an illustrated account of the Crystal Palace Bird Show of the year by Messrs. A. Silver (British Birds), D. Seth-Smith (Parrots), and F. Finn (other foreign birds); Mr. Seth-Smith also continues the story of his travels in Australia (Sydney and Brisbane), and Mr. Finn writes on *Colius erythromelon* and on two species of *Cœreba* (*C. cærulea* and *C. cyanea*) (col. pls.), while he gives further instalments of his "Stray Notes on Indian Birds." Col. Momber sketches the migration of British Birds through Italy, and gives us a tabular list with the addition of occasional remarks. An interesting paper by Dr. Butler discusses the duration of the life of captive birds, and this has induced Mr. Bonhote to write at length on the same subject, and to supply notes on the breeding and management of various species (2 pls.). Mr. H. D. Astley and Mr. Finn furnish papers on some species rarely imported to Britain; Dr. Butler recounts the foundation and progress of the Avicultural Society; Mr. T. H. Newman continues his notes on a visit to North-western Africa (Tunis and Algeria), and Mr. H. Goodchild those on his ornithological rambles. In all of these articles may be found much that is of interest to specialists in different lines; but certainly the most important to ornithologists generally is Mr. Walter Goodfellow's account of the Birds-of-Paradise, which is to be followed by further instalments. He intends to write on no less than twenty species, and begins with *Paradisea apoda*, of which he gives very full and very interesting particulars as regards life-history in the most general sense.

Reports of species breeding in captivity are furnished by Mr. Teschemaker (*Sylvia atricapilla, Otocompsa jocosa*, and *Passer diffusus*); by Major B. R. Horsbrugh (*Cereopsis, Dendrocycna fulva, D. autumnalis*, and *Chen rossi* at Stephen's Green, Dublin); by Mr. T. H. Newman (*Columba albigularis*); and by Mr. P. W. Thorniley (*Turdus fuscater*). Finally, Mr. W. H. St. Quintin writes on the European Rock-Thrushes, Mr. Finn on *Phasianus principalis* (named in memory of the late King Edward, pl.), and Dr. Hopkinson on *Ptilopachys fuscus*: while minor notes will be found in all the numbers on a variety of subjects.

76. *Bangs on Birds from Costarica.*

[Notes on some rare or not well-known Costarican Birds. By Outram Bangs. Pr. Biol. Soc. Washington, xxii. p. 29.]

Mr. C. F. Underwood in 1907–8 collected birds in Costarica, and those of special interest are now mentioned by Mr. Bangs. *Trogon melanocephalus illætabilis* and *Aimophila rufescens hypæthrus* are described as new subspecies.

77. *Bangs on new or rare Birds from Western Colombia.*

[New or rare Birds from Western Colombia. By Outram Bangs. Proc. Biol. Soc. Washington, xxiii. p. 71.]

Mr. Bangs describes some new or rare forms of birds from examples in a collection made in Western Colombia by Mervyn G. Palmer, and received through Mr. Rosenberg.

The new species and subspecies are named *Odontophorus baliolus, Picumnus canus, Xiphorhynchus rosenbergi, Rhopoctites alogus, Mionectes olivaceus hederaceus, Pheugopedius spadix, P. mystacalis saltuensis,* and *Henicorhina leucosticta eucharis.*

78. *Bangs on two rare Hawaiian Birds.*

[Unrecorded Specimens of two rare Hawaiian Birds. By Outram Bangs. Proc. Biol. Soc. Washington, xxiii. p. 57.]

The birds "discovered" in the recesses of the Museum of Comparative Zoology are *Acrulocercus apicalis* and *Ciridops anna*, both now (probably) extinct, and very rare in Collections.

79. *Beebe's 'Search for a Wilderness.'*

[Our Search for a Wilderness. By Mary Blair Beebe and C. William Beebe. New York: Henry Holt & Company, 1910. $2·75. With 398 illustrations from photographs and 398 pp., 8vo.]

Many of our readers will remember a charming account of a winter spent among the birds of Mexico by Mr. and Mrs. Beebe some years ago (see 'Ibis,' 1896, p. 580). They have now gone further afield, and during the last two winters have visited Venezuela and British Guiana.

Mr. Beebe is one of the new school of naturalists, who believe in the camera and in the patient watching of birds. At the same time he is no fanatic in this respect, and has no sentimental objections to shooting and preserving specimens if required for the purpose of identification. He is also fully competent (with the help of his assistant, Mr. Lee S. Crandall) to enrich the Zoological Park of New York, where he is Curator of Onithology, with many additions to their living collection.

Of his recent excursions to Venezuela and some of the results arrived at, Mr. Beebe has already given us an account in two papers lately published in the new Journal 'Zoologica' (see above, pp. 549, 550). A more popular history of their adventures in Venezuela, prepared by Mr. and Mrs. Beebe, is contained in the present volume, which also gives us a full history of the journey to British Guiana last year. In British Guiana three expeditions were made from Georgetown into the interior—two of these were to gold-mines situated "in the midst of the wilderness," while on the third the savanna district further south was visited.

We cannot go into particulars respecting the observations made during these well-planned excursions. Suffice it to say that no opportunity was lost, by either Mr. or Mrs. Beebe, of acquiring information respecting the animal life of the country traversed. The Birds were, of course, specially attended to, and we may call particular attention to the notes on the Trumpeters, the Curassows, and, above all, the Hoatzins. In fact, every page of the work is replete with information, well illustrated by pictures taken from real life in the jungle. We can thoroughly recommend the 'Search for a Wilderness' to every lover of Natural History.

But poor Mrs. Beebe met with a sad adventure, which brought the excursion to Guiana to a rapid conclusion. A loose string brought the hammock on which she was sitting, to the ground, and caused her a broken wrist. It was necessary to leave for Georgetown instantly for skilled assistance. But "Miladi" recovered quickly from her accident, and no traces of the fracture remain. She and her husband (whom one of us had the pleasure of meeting when they passed through London this summer) are now, we believe, in the jungles of India searching for living Pheasants for the New York Zoological Park.

80. *Bentham on a new Indian Sun-bird.*

[A new Species of Sun-bird (*Æthopyga*) obtained near Darjiling, British Sikhim. By T. Bentham, Indian Museum. Rec. Ind. Mus. vol. ii. p. 167 (1908).]

The new species is based on a specimen obtained by the author in the forest of Ghoom, near Darjiling, and is named *Æthopyga griseiceps*. It is most nearly allied to *Æthopyga nipalensis*, but is distinguished by its grey head.

81. *Clark on the Birds of Korea.*

[Report on a Collection of Birds made by Pierre Louis Jouy in Korea. By Austin H. Clark. Proc. U.S. Nat. Mus. vol. xxxviii. pp. 147-176 (1910).]

In 1907 (see 'Ibis,' 1907, p. 641) Mr. Clark described the (supposed) new species of birds represented in a large collection made by the late Pierre Louis Jouy during a residence of over three years in Korea. Mr. Clark now gives us a complete list of the whole collection, which belongs, we suppose, to the U.S. National Museum. It contains 554 specimens, taken mainly at Fusan, Chemulpo, and Seoul, though some are from the island of Tsushima in the Korean Straits. Other interesting specimens obtained by Dr. W. Lord Smith of Boston, in 1892–3, in South-western Korea are likewise noticed.

The whole list contains the names of about 165 species, which are arranged after the fashion and nomenclature of the American 'Check-list.' It is of considerable interest, as the Ornis of Korea was previously little known to us, although many stray specimens had been obtained there.

We see no mention in it of the Branicki's Sea-Eagle (*Haliaëtus branickii*), allied to but quite different from *H. pelagicus*, and described by Taczanowski in 1888 *, from a specimen obtained in Korea by Kalinowski. The example of this magnificent bird, formerly living in the Zoological Society's Gardens †, is now, we believe, in the Norwich Museum.

82. *Coward's 'Fauna of Cheshire.'*

[The Vertebrate Fauna of Cheshire and Liverpool Bay. Edited by T. A. Coward. Witherby and Co., London, 1910. Vol. I., pp. i–xxxii, 1–472; Vol. II., pp. i–xl, 1–204.]

Ornithologists though we are, we are interested in both volumes of this important work on the Fauna of Cheshire;

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* P. Z. S. 1888, p. 451.

† See P. Z. S. 1893, p. 613; List of Animals, 1896, p. 387.

for the Birds occupy much of the first volume, and a section on the Wild-fowl of the Dee is included in the second. The authors have rightly extended the political boundary of the county so as to take in Liverpool Bay—chiefly for the sake of the "marine fish-fauna"—and "many square miles of marshes" in Flintshire, which naturally belong to the country watered by the well-known Cheshire river. A commencement is made with a description of the physical features of the district, the changes that have taken place inland and on the shores, and the gradual increase of the towns and their population; and with this are incorporated many interesting notices of the species of birds that of old inhabited the Mosses characteristic of the area, the marshes and lakes now drained or still existing, and the brine "flashes" still in process of formation.

Next follows an account of the scanty literature of the past, and a section on the preservation of Game, whence we pass on to the Mammals. But we are only concerned here with the portion of the work referring to Birds, to which is prefixed a separate or special Introduction. In this we learn that the following species have been added to the county list since Messrs. Coward and Oldham published their 'Birds of Cheshire' in the year 1900:—the Cirl Bunting, the Mealy Redpoll, the Woodchat-Shrike, the Shore-Lark, the Shag, the American Blue-winged Teal, the Kentish Plover, Schlegel's Petrel, and Baillon's Crake.

An excellent account is given of the 231 species of Birds which have been satisfactorily proved to have occurred in Cheshire during the present or the last century, though the habits are discussed at unusual length for a local fauna, and this part of the book might perhaps have been shortened with advantage. About 112 of these birds breed or have bred recently within the chosen boundaries, even when we omit such as the Marsh- and Hen-Harriers, the Bittern, the Oystercatcher, and the Terns, with regard to which no definite records have been preserved. We may call special attention in this connexion to the example of *Querquedula discors*, shot on the Dee estuary some fifty years ago, and to the case of a drake Pintail which paired with a Mallard Duck, and brought off a brood at Toft, near Knutsford.

On the whole, Cheshire has a poor avifauna, owing to its want of a rocky coast-line and its position, which places it apart from the best-known lines of migration; but the county is especially interesting as being one in which the breeding-ranges of several northern and southern species meet.

Additional value is given to the work by a sketch of the Acts for the Protection of Birds and Eggs, and of the specially protected areas, by a section on Migration, and by a very full Bibliography referring to the whole subject. A good map of Cheshire is added.

The Classification and Nomenclature used are mainly those of Howard Saunders, though Hartert is followed where he has distinguished British races from those of the Continent; we fail, however, to see why "Linné" is used, instead of "Linnæus" or one of the usual abbreviations, in cases where his specific names are adopted.

The portions of the book on Mammals and Birds are the work of Messrs. T. A. Coward and C. Oldham, as are those on the Reptiles, Amphibians, &c., while that on the Fishes is by Mr J. Johnstone, and Mr. J. A. Dockray contributes the article on the Dee as a resort of Wild-fowl. The plates are excellent and are chiefly from photographs by Mr. T. Baddeley.

83. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Parts XXI., XXII. February 1910.]

Mr. Dresser's great work on Oology is now nearing completion, one more part only remaining to be issued. In the present part we have the continuation of the Scolopacidæ, the Terns, the Gulls (including the Skuas), and some of the Petrels; and we wish once more to draw particular attention to the great mass of new information on the range of many species derived from Mr. Buturlin, and on his experiences on the Kolymá River in Siberia. The discovery by him of the eggs of *Rhodostethia rosea* is narrated—though not for the first time—in this part of Mr. Dresser's book, and the true facts are given concerning *Numenius tenuirostris* and its breeding-range; while an error of Middendorff's with regard to *Tringites rufescens* is corrected.

There is much of interest in the British Birds included in this instalment, and we notice that Mr. Dresser has safeguarded himself in the matter of the supposed Wood-Sandpiper's eggs from Elgin, which were certainly wrongly identified (*supra*, p. 730). In the case of the Roseate Tern, however, he is too sceptical, as the eggs were certainly taken on one occasion at least in Norfolk (coll. A. Newton), when the parents were carefully identified. Again he might have extended the breeding-range of the Sandwich Tern on the Scottish mainland to Sutherland, whence the late T. E. Buckley procured a single egg. Perhaps he considers such an exceptional case better omitted. We cannot complain, on the other hand, of his statement that the Common Gull does not nest to the south of the Border-land, though we should have wished him to have stated that the record from St. Abb's Head by Hepburn was undoubtedly erroneous, and that the bird is not found on the East Coast of Scotland in general. But he is decidedly mistaken in doubting whether the Arctic Skua breeds in Caithness—there is, or was a few years ago, at least one fair-sized colony there.

The plates of this book are excellent, and, though dark eggs are difficult to photograph successfully, the results are most satisfactory.

84. *Eaton on the Birds of New York.*

[New York State Museum. Memoir 12. Birds of New York. By Elon Howard Eaton. Part I. 1 vol., 4to. Albany, 1910.]

This is the first volume of a new history of the birds of the State of New York, prepared by Mr. E. Howard Eaton, who, we are assured, is an experienced student of the subject. It is accompanied by 42 coloured plates, which, together with 500 pages of letterpress, make a somewhat ponderous volume. The plates have been drawn by Mr. L. A. Fuertes, an accomplished artist well known in America, and are "full of life," but in some instances, we think, a little over-coloured.

The last history of the birds of the State of New York was that of De Kay, published more than sixty years ago, and it was therefore quite time that a new treatise on the subject should be undertaken, especially as during this long interval upwards of 100 species have been added to the List of those met with in the State.

The nomenclature and arrangement followed in the present work are those of the well-known American 'Check-list': so that, beginning with the lowest forms, we are carried on as far as the Pigeons, leaving the mighty army of Passeres for the second volume.

85. '*The Emu.*'

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. ix. pts. 2–4, Oct. 1909–April 1910.]

The October number commences with two lists of Birds by Mr. G. M. Mathews: one from North-west Australia in continuation of a former instalment, the other from the Alexandra District, which is supplementary to that given in 'The Ibis' for 1907 (p. 387). They contain short notes from the collectors Rogers and Stalker on the colours of the soft parts and the birds' food. Mr. C. G. Gibson follows with an article on the species found between Kalgoorlie and the South Australian Border; Mr. R. Hall with notes on Murray River Ducks and on variation in *Trichoglossus novæ-hollandiæ*; Mr. A. F. Crossman on birds seen at Cumminin Station, W.A.; and Mr. Mathews on additions to his 'Hand-list to the Birds of Australasia.' We do not find much of very general interest in these papers, though they will doubtless prove useful to workers in the special districts; but Miss Fletcher's 'Bird Notes from Cleveland, Tasmania' (pt. ii.), deal in a graphic manner with the habits of some of the rarer species of that country, while Mr. D. Le Souëf gives a full account of the splendid collection of Australian Birds' eggs formed by Mr. H. L. White. To our mind the plates of Regent-Birds' and Ospreys' eggs look a little as if Mr. White and his collectors were overdoing the affair, but we may safely leave our Australian cousins to see that no harm is done to the rarer species. Finally, Mr. S. W. Jackson describes the nest and eggs of *Pachycephala lanioides.*

In January we find the Minutes of the Ninth Annual Session of the Australian Union, held at Adelaide under the presidency of Mr. D. Le Souëf, whose portrait accompanies the letterpress. Excursions were made to the Mount Lofty ranges, the Eyre peninsula, and elsewhere with interesting results; a committee was appointed to collect and report upon local names of birds; a motion was passed that a protected area ought to be provided on Kangaroo Island, and various other business was transacted. The President's address was on "Bird Sanctuaries," and Mr. Mattingley read a paper on the habits of the Cuckoos.

Articles by Mr. R. Hall concerned with the Eyre peninsula (2 pls.), by Mr. C. Barrett on *Neophema petrophila* (pl.), by Mr. E. M. Cornwall on *Ardea sumatrana* (pl.), by Mr. F. M. Littler on a trip to Ninth Island, Bass Strait, by Mr. A. F. Crossman on the Birds of Broome, N.W.A., by Mr. H. S. Dove on the life-history of the Tasmanian Blue Wren, by Mr. W. J. Armstrong on Albatross Island, and by Mr. H. W. Wilson on the first "Bird Day" in the Commonwealth, help to fill up this part, and afford much useful information chiefly of a local character. Mr. S. W. Jackson describes as new the eggs of *Acanthiza tenuirostris* and *Amytornis gigantura.*

More than half the April part is occupied by an important paper on the birds of the East Murchison district by Mr. F. L. Whitlock, with no less than ten plates. He collected for Mr. H. L. White at Lake Way, Lake Violet, Milly Pool, and other localities, and was wonderfully successful, finding nests of *Peltohyas australis* (pl.), *Cinclosoma marginatum* (pl.), *Acanthiza robustirostris,* the new *A. whitlocki* (pl.), *A. uropygialis* (pl.), *A. tenuirostris, Stipiturus ruficeps, Amytornis gigantura* (pl.), *A. striatus* (pl.), *Lacustrœca whitei* (col. pl.), and *Certhionyx variegatus* (pl.), most of them with eggs. He also discovered the bower, nest, and eggs of *Chlamydodera guttata* (pls.). Of these and their surroundings a most interesting account is given, while the whole paper abounds with information on the ways, and especially the nesting-habits, of the rarer species.

The April part is continued by articles on the stomach-contents, parasitic worms, and protozoa, of 57 native birds by Dr. J. B. Cleland; on the Mallee country by Mr. F. E. Howe; on *Manorhina melanophrys* by Mr. F. E. Wilson; on the Satin Bower-Bird by Mr. C. F. Cole; on the birds of Parry's Creek, N.W.A., by Mr. Mathews; and on those of Drouin, Gippsland, by Mr. I. Batey.

Of new species we have in the three parts descriptions of *Eopsaltria jacksoni* (p. 70) with a coloured plate of bird, nest, and young, from the Herberton Range (*cf.* 'Emu,' viii. p. 284, ix. p. 246), and of *Acanthiza flaviventris* from Lake Frome, S.A. (p. 137); while attention is drawn (p. 173) to others recently described in the 'Victorian Naturalist,' and one is withdrawn (p. 163).

86. *Festa on Birds from Darien and Ecuador.*

[Nel Darein e nell' Ecuador. Diario di viaggio di un Naturalista. Dr. E. Festa. 1 vol. 397 pp.]

The author has kindly sent us a copy of this work, which has no bookseller's name attached to it, and appears to have been privately printed. Dr. E. Festa is a well-known and energetic traveller and naturalist, who has sent a large series of zoological specimens to the Museum of Turin, where they have been studied and described by Count Salvadori. In Darien Dr. Festa obtained 202 specimens belonging to 122 species, among which was a new Tanager (*Rhamphocœlus festæ*), named by Salvadori after its discoverer*. But a much more extensive collection was made during his longer sojourn in Ecuador, where 2892 specimens of birds were obtained. These were referred to 613 species, of which 17 were new to science.

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* Bol. Mus. Torino, vol. xii. p. 219 (1896).

In the present work we find a popular account of Dr. Festa's travels and adventures, well illustrated by numerous figures in the text, and by two maps which shew the traveller's exact routes. There are occasional, but not many, allusions to bird-life in the narrative, and we could wish that this part of the subject had obtained greater attention.

87. *Godman's 'Monograph of the Petrels'* *.

[A Monograph of the Petrels (Order Tubinares). By F. DuCane Godman, D.C.L., F.R.S., President of the British Ornithologists' Union, &c. With hand-coloured Plates by J. G. Keulemans. Part V. Witherby & Co., May 1910.]

We have now received the fifth part of this excellent work, which completes the Monograph. We have already given an account of its origin and plan of its execution in our previous notices, and need not repeat what has been already plainly stated. To say that the subject is now exhausted would not be true. But the Author has gathered together all that is yet known about the Tubinares, and formed a solid basis for future naturalists to build upon. Moreover, he has illustrated his subject by an unequalled series of coloured plates, which will be of the greatest value to those who are studying the natural history of this difficult group.

Mr. Godman adds to the present part of his work a valuable disquisition on the systematic position of the Petrels, drawn up by Mr. Pycraft, which merits careful study. Their osteological characters, Mr. Pycraft says, support the contention that, although their Ciconiiform affinities are evident, the Petrels are also allied to the Divers and Penguins, but have little to do with the Gulls, as some authorities have maintained.

According to the present work, the Tubinares, as at present known, are divisible into four families: Procellariidæ,

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* For notice of Part IV., see 'Ibis,' 1909, p. 546.

Puffinidæ, Pelecanoididæ, and Diomedeidæ. One hundred and twenty-two species, belonging to twenty-five genera, are recognised.

There are altogether 103 coloured plates, so that all except a few of the more obscure species are figured. The complete work, bound, can now be obtained for fifteen guineas.

88. *Grinnell on Alaskan Birds.*

[Birds of the 1908 Alexander Alaska Expedition, with a Note on the Avifaunal Relationships of the Prince William Sound District. By Joseph Grinnell. Univ. of California, Publ. in Zool., Vol. v. No. 12. Berkeley, Cal., 1910.]

The territory selected for exploration by Miss Alexander's third expedition to Alaska (1908) was the Prince-William-Sound Region, which lies at the head of the Gulf of Alaska. Its fauna was previously little known. The ornithological material collected during the expedition, besides the naturalists' field note-books, comprised 500 bird-skins and ten sets of eggs, which have been presented by Miss Alexander to the Museum of Vertebrate Zoology of the University of California.

The birds observed and obtained during the expedition are referred to 89 species, concerning which there are many interesting field-notes. *Canachites canadensis atratus* and *Lagopus rupestris k ellogæ* are described as two new subspecies of Grouse, *Ceryle alcyon caurina* as a new subspecies of Kingfisher, *Passerella iliaca sinuosa* as a new Finch, and *Penthestes rufescens vivax* as a new Titmouse.

As an appendix to the memoir we have a discussion on the origin of the Avifauna of the district examined, with the result that it appears to belong to two different life-zones—the "Hudsonian" and the "Alpine-Arctic." The former is practically coincident with the timbered area, which is confined to a narrow tract bordering the sea-shore and extending up the valleys; while the "Alpine-Arctic" or treeless zone covers the tops of the mountains and the interior land-mass.

89. *Hartert on Palæarctic Birds.*

[Die Vögel der paläarktischen Fauna. Systematische Uebersicht der in Europa, Nord-Asien und der Mittelmeerregion vorkommenden Vögel. Von Dr. Ernst Hartert. Heft vi. (Doppelheft). Seite 641–832. Mit 10 Abbildungen. Berlin, June 1910.]

The issue of the sixth part of Dr. Hartert's 'Review of the Birds of the Palæarctic Region' completes the first volume of this important work, and affords us an opportunity of making a few remarks upon the new school of Trinomialism, of which Dr. Hartert is one of the principal and most active champions.

Some hundred and fifty years ago the great Linnæus invented the famous plan that all animals and plants should be designated by two names only—one that of the genus, and the other that of the species. This excellent scheme was at once adopted by naturalists, and has been followed by all writers, with very few exceptions, until recent years, when the discovery was made that many species, especially those spread over an extensive area, might be divided, by more or less stable characters, into local forms, or, as they are now usually called, "subspecies." In order to designate the "subspecies" shortly a third or "subspecific" name was attached to the generic and specific terms, and the "binomial" system of Linnæus was thus converted into a "trinomial" system. Moreover, if the practice of attaching the name of the authority for the specific term be retained (as is done by Dr. Hartert), all species which are divisible into subspecies will have four names instead of the two of the Linnean System.

In spite of this defect (as *we* consider it), Trinomialism has secured many adherents, especially in Germany and the United States, and the number of "subspecies" is increasing rapidly day by day. No careful student of animals can deny that subspecies really do exist in Nature, but the question is whether it is advisable to give them a special name. The late Dr. Sharpe was, as we all know, greatly opposed to this being done, and, in his 'Hand-list,' has turned all the trinomial names into binomials. Dr. Hartert, on the other hand, is strongly in favour of trinomials, and employs them, as we are disposed to think, rather too freely. Of the 1240 forms comprised in the first volume of his 'Palæarctic Birds,' by far the greater number have a third name. In fact, he often degrades to the rank of "subspecies" many easily distinguishable forms which other writers have treated as full species.

Another point on which we cannot at all agree with Dr. Hartert is the duplication of the specific name in the case of such subspecies as are the typical forms of the species. It would be much simpler and more elegant, we think, to designate the typical form by the addition of the word "typicus" to the generic and specific names. Thus we should write "*Corvus corax typicus*," not "*Corvus corax corax*." When, as is the case with those who use "toutonyms" (*i. e.*, the same name for the genus and species), the one name is repeated three times over (e. g., *Pica pica pica*, *Coccothraustes coccothraustes coccothraustes*), the effect is almost ludicrous!

A third point in nomenclature upon which we cannot follow Dr. Hartert is his alteration of many of our most familiar scientific names on what we should be inclined to consider insufficient evidence. For example, the Grey Flycatcher is called *Muscicapa striata* instead of *Muscicapa grisola*, the genus "*Accentor*" is changed to "*Prunella*," and *Turdus musicus* is dethroned in favour of *Turdus philomelus*! It would be easy to shew in these and other similar cases that such changes might have been avoided by a little judicious management. And consider the number of text-books and books of reference that have employed these rejected terms for the last hundred years, and are now required to change them on grounds that are appreciable only to the few students of zoological nomenclature.

The subspecies provided with new names in the sixth part of vol. i. of this work are:—

Page xxxii. *Parus major terræ-sanctæ* (Palestine).
„ xliv. *Ianthocincla ellioti honoripeta* (Tibet).
„ 711. *Oreicola ferrea haringtoni* (China).
„ 749. *Luscinia pectoralis confusa* (Sikim).
„ 753. *Erithacus rubecula witherbyi* (Algeria).
„ 766. *Prunella collaris ripponi* (Yunnan).
„ 770. *Prunella fulvescens dresseri* (Turkestan).
„ 776. *Troglodytes troglodytes taivanus* (Formosa).
„ 780. *T. t. kabylorum* (Algeria).
„ 783. *T. t. szetschuanus* (Setchuan).
„ 784. *T. t. ogavæ* (Japan).
„ 802. *Chelidon rustica transitiva* (Palestine).
„ 809. *Hirundo urbica meridionalis* (Algeria).
„ 810. *H. urbica nigrimentalis* (China).

Notwithstanding the objections we have urged to some of Dr. Hartert's practices in nomenclature, there can be no doubt that the 'Birds of the Palæarctic Fauna' is a most important work, and should be carefully referred to by all students of the European Ornis. It contains a mass of valuable information that is not to be found in any other publication, and brings it together in an accessible form.

90. '*The Irish Naturalist.*'

[The Irish Naturalist. A Monthly Journal of General Irish Natural History. October 1909 to August 1910.]

A few ornithological articles are included in these numbers. In October 1909 Mr. N. H. Foster continues his observations on the weights of birds' eggs in a fresh condition; in November Major Barrett-Hamilton has a note on a supposed eyry of the Goshawk in Ireland; while in January and February 1910 Mr. D. C. Campbell writes an account of the birds of Inch and Upper Lough Swilly, which contains a considerable amount of interesting matter. The introduction of a few more articles on Birds in this Magazine would be of advantage to Irish Ornithology, and increase our knowledge of local distribution.

91. *Jackson on the East-African Francolins.*

[East Africa and Uganda Francolins. By F. J. Jackson. Journ. E. Afr. N. H. Soc. i. p. 7 (1910).]

With great pleasure we have received a copy of the first part of the 'Journal of the East Africa and Uganda Natural

History Society,' and we express our hope that it may be the precursor of a long series of equally interesting numbers. We see that Mr. F. J. Jackson is the President of the Society and the Chairman of the Executive Committee, and we find that, as might have been expected, he contributes an ornithological article to the new Journal.

The subject Mr. Jackson has selected is the Francolins of East Africa, of which he recognises sixteen species, twelve belonging to typical *Francolinus*, and four to the bare-throated genus *Pternistes*. All known particulars are given respecting these birds and their habits and distribution, but we are told that very little has been recorded as regards their breeding-season, and that more information on this point is much required. The Francolins and Guinea-fowls are the principal Game-birds of East Africa, and it is highly desirable that regulations should be made for their protection, as they are now shot indiscriminately at all times in the year.

A coloured figure of *Francolinus hubbardi*, drawn by Major Jones, illustrates this memoir.

92. *Jouy on two Paradise-Flycatchers.*

[The Paradise-Flycatchers of Japan and Korea. By Pierre Louis Jouy. Proc. U.S. Nat. Mus. xxvii. p. 651.]

Dr. Stejneger publishes a paper, written by the late M. Jouy, on the Paradise-Flycatchers of Japan and Korea, which shews that the two forms, although closely allied, are different. For the former it is proposed to use the name *Terpsiphone atrocaudata* (Eyton), and for the latter the new name *Terpsiphone owstoni*. *T. atrocaudata* is apparently restricted in Japan to the southern islands, but is also met with in South-eastern Korea, while *T. owstoni* inhabits Hondo Island, Japan, and Amoy and Hong-Kong in China.

93. *Kirkman on British Birds.*

[The British Bird Book. An Account of all the Birds, Nests, and Eggs found in the British Isles. Edited by F. B. Kirkman. Illustrated by two hundred coloured drawings and numerous photographs. Vol. i. T. C. & E. C. Jack : London and Edinburgh, 1910.]

We have here a work by a new author, who intends, in twelve sections, to provide an account of all the subjects mentioned in the title. He complains that since 1885 no important comprehensive book has been published in Britain on its Birds; while he seems to prefer the "new Naumann" to our recognised authorities, and to take it, roughly speaking, as a model. We hope that he will succeed in his somewhat ambitious project of bringing together information from every source in a comparatively small compass, and there can be no doubt that of late years much fresh light has been thrown on such subjects as Courtship and Migration. As Mr. Kirkman states that his work is intended in the main to be of a popular description, and devoted specially to a consideration of the birds' habits, it may well be useful to those for whom he writes, and we see that he has secured a goodly number of contributors, many of whose names are well known in various branches of Ornithology.

Each chapter is to deal with a Family, and coloured plates are to be given of nearly all the birds and eggs. These are not particularly successful, but we are pleased with some of the photographs of the nests.

94. *Littler on the Birds of Tasmania.*

[A Handbook of the Birds of Tasmania and its Dependencies. By Frank Mervyn Littler, F.E.S. Launceston, Tasmania, 1910. 1 vol. 8vo. 242 pp. Price 4s.]

A book on the Birds of the whole continent of Australia must necessarily be a bulky work, and could hardly be made conveniently portable; but the much smaller avifauna of Tasmania renders such an undertaking, as regards that country, a comparatively easy matter. We are, therefore, much pleased that Mr. Littler should have taken up the task, and are sure that his 'Handbook' will be much appreciated by his fellow-countrymen, who were previously obliged to go to Australian authorities to find descriptions of their native birds.

Mr. Littler reckons the total number of absolutely authenticated species, including accidentals, casuals, and migrants, of all Orders for Tasmania at slightly over 200.

This is not a large number, but, as he observes, Tasmania is not rich in bird-life, either as regards species or as regards individuals. In Tasmania all the birds are essentially Australian in character, but about 20 are sufficiently different from their Australian representatives to be considered as "peculiar or insular forms."

The 214 species included in the present work are arranged according to the order of the British Museum Catalogue. After the English and scientific names follow in each case descriptions of the plumage of both sexes, and in many instances of the immature dress. Then come accounts of the nests, eggs (if known), breeding-season, and habits. Great attention is given to the geographical distribution, which is shortly but distinctly stated in every case. There are 49 good half-tone illustrations taken from photographs, and mostly representative of nests and eggs.

In concluding this brief notice of a good piece of work we may fairly say that it is, in our opinion, a great credit to our Colony to have produced it. It has been written for Tasmanians by a Tasmanian, who, as shown by his pertinent "observations" on the manners and customs of the species, must be intimately acquainted with the bird-life of his country. There can be no doubt that Mr. Littler's volume, which is provided at a very moderate price, will attract many purchasers and will help much to promote the study of Tasmanian Birds.

95. *Lönnberg on Discoveries of Subfossil Vertebrates.*

[Några fynd af subfossila vertebraten. By Einar Lönnberg. Arkiv for Zoologi, Band vi. no. 3. Stockholm, 1909.]

This paper treats of the discovery in Sweden of a skull of a Reindeer with antlers, of three skeletons of Seals, and the skeleton of a Goose. This last skeleton was found in boulder-clay 1·20 m. above the sea at Sundsvall, and is interesting, as fossil remains of birds are by no means common, and the present find is only the second instance of the remains of a bird having been found in glacial clay in Sweden. Very full particulars and ten photographs of the bones are given, together with measurements; while the conclusion arrived at by Professor Lönnberg is that the bones are those of *Anser neglectus* Sushkin, a form which differs but little from *Anser brachyrhynchus*.

96. *Muir and Wershaw on a new* Pitta.

[A new Bird from the Island of Ceram, Moluccas. By F. Muir and J. C. Wershaw. Proc. Biol. Soc. Washington, xxiii. p. 65.]

Pitta piroensis, sp. nov., from Ceram, is nearly allied to *P. rubrinucha* of Bourou.

97. *Nehrkorn's Catalogue of Eggs.*

[Katalog der Eiersammlung, nebst Beschreibungen der aussereuropäischen Eier. Von Adolph Nehrkorn. Zweite Aufl. Mit 4 Eiertafeln in farbigem Steindruck. Berlin: Friedländer, 1900. 1 vol., 8vo, 449 pp.]

This is a second edition of the Catalogue of the great collection of birds' eggs formed by Herr Adolph Nehrkorn of Riddagshausen, near Brunswick, and now in the Museum of Berlin (or on its way there), the owner having liberally presented it to that Institution. It is without doubt one of the largest and most complete collections of these beautiful objects ever made, no trouble or expense having been spared in amassing it. The Catalogue follows Sharpe's 'Hand-list' of Birds in arrangement and nomenclature. It enumerates the names of 5440 species, the eggs of which are represented in the Collection. Short characters are given of the eggs of non-European species, and the *patria* is stated, but unfortunately no authorities for the identification are added.

Many rarities are represented in the series, such as examples of the eggs of eleven species of Galapagoan Finches, of six species of Paradise-birds, of *Calyptomena viridis*, *Nasiterna pusio*, and *Chunga burmeisteri*. There is an excellent alphabetical index, and four good coloured plates of thirty-seven special rarities.

98. *Nelson on a new Mexican Thrush.*

[A new Thrush from Mexico. By F. W. Nelson. Proc. Biol. Soc. Washington, xxii. p. 49.]

A new subspecies of *Catharus*, from Tamaulipas, is named *C. mexicanus smithi*.

99. *North on a new Australian Honey-eater.*

[Description of a new Genus and Species of Honey-eater from Western Australia. By Alfred J. North. Vict. Nat. xxvi. p. 138 (1910).]

Under the name *Lacustroica whitei* Mr. North describes a new genus and species of Honey-eater from Western Australia. It is allied to *Entomophila,* but has a shorter bill, longer tarsus, and a different wing-formula. It is a small bird of dull colours.

100. *Penard on the Birds of Guiana.*

[De Vogels van Guyana (Suriname, Cayenne en Demerara), door Frederik Paul Penard en Arthur Philip Penard. Tweede Deel. Paramaribo, 1910. 8vo, 587 pp.]

This is the second volume of the work on the birds of the three Guianas (Dutch, French, and British), to which we called our readers' attention on a previous occasion ('Ibis,' 1909, p. 373). It is written in Dutch, the native language of the authors, although we should have thought that, as we have said before, English would have been better understood by those whom the work is likely to interest.

The present volume contains an account of the Picariæ and Passeres of the Guianas and concludes the work. The numerous species of the Guianan Avifauna included in it are mostly familiar, but there are a few names in the List that are unknown to us, such as *Hadrostomus atricapillus surinamensis, Attila surinamensis, Heteropelma surinamense, Todirostrum surinamense, Formicarius tamiesoni,* and *Lamprospiza charmesi.* Specimens of these supposed new species require careful examination before they can be admitted to a permanent place in the South-American Ornis.

101. *Ridgway on new Genera, Species, and Subspecies of* Formicariidæ, Furnariidæ, *and* Dendrocolaptidæ.

[New Genera, Species, and Subspecies of Formicariidæ, Furnariidæ, and Dendrocolaptidæ. By Robert Ridgway. Proc. Biol. Soc. Washington, xxii. p. 69.]

The 11 new genera of Formicariidæ are *Megastictus* (type *Myrmeciza margaritata*); *Myrmopagis* (type *Myrmothera* *axillaris*); *Rhoporchilus* (type *Formicivora speciosa*); *Myrmorchilus* (type *Myiothera strigilata*); *Myrmoderus* (type *Myiothera loricata*); *Phænostictus* (type *Phlegopsis maccleannani*); *Hylophylax* (type *Conopophaga nævioides*); *Oropezus* (type *Grallaria rufula*); and *Hylopezus* (type *Grallaria perspicillata*).

The 7 new genera of Furnariidæ are *Premnornis* (type *Margarornis guttata*); *Drioctistes* (type *Thripophaga sclateri*); *Phaceloscenus* (type *Anumbius striatocollis*); *Schœniophylax* (type *Sylvia phrygonophila*); *Acrorchilus* (type *Synallaxis erythrops*); *Hyloctistes* (type *Philydor virgatus*); and *Rhopoctites* (type *Philydor rufo-brunneus*).

The 11 new species and subspecies are named *Automolus cervinigularis hypophæus* (Costa Rica); *Acrorchilos erythrops griseigularis* (Colombia); *Synallaxis albescens hypoleuca* (Panama); *Dendrocolaptes validus costaricensis* (Costa Rica); *Xiphorhynchus flavigaster yucatanensis* (Yucatan); *X. punctigula insolitus* (Panama); *X. lacrymosus rostratus* (Colombia); *Picolaptes affinis neglectus* (Costa Rica); *Campylorhamphus chapmani* (S. America); *Myrmeciza zeledoni* (Costa Rica); and *M. berlepschi* (Ecuador).

Here we have, we suppose, diagnoses of the new genera, species, and subspecies introduced by Mr. Ridgway in the fifth volume of his great work on the Birds of North and Middle America, upon the preparation of which he is now engaged. The fourth volume was published in 1907 (see 'Ibis,' 1908, p. 190).

102. *Ridgway on new Forms of* Cypselidæ *and* Trochilidæ.

[Diagnoses of new Forms of Micropodidæ and Trochilidæ. By Robert Ridgway. Proc. Biol. Soc. Washington, xxiii. p. 53.]

The new genus and the ten new species and subspecies of Swifts and Humming-birds are named as follows:—*Nesophlox*, gen. nov. (type *Trochilus evelynæ*); *Streptoprocne zonaris mexicana* (Mexico); *Chætura richmondi* (Costa Rica); *Cypseloides niger jamaicensis* (Jamaica); *C. n. costaricensis* (Costa Rica); *Phaethornis longirostris veræ-crucis* (Vera Cruz); *P. adolphi saturatus* (Guatemala to Panama);

Amizilis bangsi (Costa Rica); *Eupherusa eximia nelsoni* (Vera Cruz); *Anthracothorax prevosti gracilirostris* (Costa Rica); *Florisuga mellivora tobagensis* (Tobago).

These diagnoses, like those in the former paper, are, no doubt, in anticipation of the descriptions in the fifth volume of Mr. Ridgway's work, which we hope will soon be published.

103. *Riley on the Sharp-shinned Hawk.*

[On the Name and Synonymy of the Sharp-shinned Hawk. By J. H. Riley. Proc. Biol. Soc. Washington, xxiii. p. 77.]

Mr. Riley points out that if, as he suspects, *Accipiter fringilloides* Vigors of Cuba is identical with *Sparvius striatus* Vieill. of San Domingo, the species ought to bear the latter specific name, as being ten years older. He has not yet been able to compare specimens from the two islands.

104. *Thienemann on the Bird-Observatory of Rossitten.*

[Die Vogelwarte Rossitten der Deutschen Ornithologischen Gesellschaft und das Kennzeichnen der Vögel. Von Dr. J. Thienemann. Berlin, 1910. 8vo.]

This little pamphlet of 16 pages contains full information on the bird-observatory of Rossitten in the south-east corner of the Baltic, founded by the German Ornithological Society in 1901. It is well illustrated by maps and text-figures. The institution is specially devoted to the question of migration. Full particulars are given respecting the mode of labelling birds with aluminium rings, so that they may be recognisable when captured elsewhere, and information as to their direction of flight thus be obtained. As is well known, Storks labelled at Rossitten have been captured in many places in South Africa.

105. *Waite on the Birds of the Subantarctic Islands of New Zealand.*

[Reports edited by Charles Chilton, M.A., D.Sc., F.L.S. Pp. 351-584: Aves. By Edgar R. Waite, Curator, Canterbury Museum, Christchurch, New Zealand.]

The "Subantarctic Islands" belonging to New Zealand consist of six widely separated groups, the most northerly being "The Snares," about 65 miles south of Stewart Island. Next to The Snares come the Auckland Islands, with two larger islands (Auckland Island and Adam's Island) and several smaller. Beyond them, about 140 miles to the south-east, lies Campbell Island, and 400 miles E.N.E. from the latter are the Antipodes Islands, containing one larger island and seven smaller. The fifth group, the "Bounty Islands," lie about ninety miles north of the "Antipodes." The five groups above mentioned all stand upon the comparatively shallow oceanic plateau which surrounds New Zealand; but the sixth and last, Macquarie Island, with its satellites, is outside this plateau, and about 570 miles S.W. of Stewart Island.

During the expedition to the Subantarctic Islands, of which this volume gives us an account, it appears to have been one of the rules that "neither birds nor their eggs were to be taken." The report on this part of the subject is, therefore, necessarily rather meagre, being confined to an enumeration of the species already recorded from the islands, together with notes on some of them which attracted the author's special attention.

The species mentioned are some 45 in number, mostly Petrels and other sea-birds, there being only 12 Passeres in the List. There are some useful figures introduced in the text, and, amongst others, illustrations of the nests and young of the two large Albatrosses, *Diomedea exulans* and *D. regia*. The former was found breeding on the Auckland Islands, including the western end of Adam's Island, the eastern end of that island being occupied by *D. regia*.

A sharp look-out was kept along the shores of the Auckland Islands for the scarce Southern Merganser (*Mergus australis*), but it was not met with.

106. *The 'Zoological Record' of* 1908.

[Zoological Record. Vol. xlv. 1908. Aves, by R. Bowdler Sharpe, LL.D. London: Harrison and Sons. Price 6*s*. December, 1909.]

The 'Zoological Record' of 1908, being the forty-fifth volume of this most useful work, which also, according to the present arrangement, forms part of the 'International Catalogue of Scientific Literature,' was issued in December 1909. As in the preceding years, the section "Aves," in which we are specially interested, was compiled by the late Dr. Bowdler Sharpe (with, we believe, the able assistance of Mr. Charles Chubb), and was one of the last pieces of good work that our much lamented friend performed*.

The Record of "Aves" commences, as usual, with a List of the Titles of all works and memoirs relating to Ornithology issued in 1908, arranged in alphabetical order under the authors' names. The Titles are 1949 in number. The corresponding number of Titles in 1907 was 1716.

Next to the "List of Titles" comes the "Subject Index," divided up, as we think, into too many heads, and concluding with the Geographical Index. In the "Subject Index" the titles are not fully repeated, but conveniently referred to by the name of the author and the number of his book or memoir in the "List of Titles."

The third section of the Record of "Aves" is very important for workers in Systematic Ornithology, as it tells us what has been done during the past year in each of the Orders of Birds arranged according to Dr. Sharpe's own system, and in each Family of the Passeres. For example, if working at Paradise-birds, one has only to turn to "Paradiseidæ" in the Systematic Index to find references to the various publications of 1908 in which information has been given on this group and the names of the newly described species. This, we need hardly point out, is a very great convenience to working writers in Ornithology.

Mr. W. L. Sclater, F.Z.S., M.B.O.U., has been appointed to succeed the late Dr. Bowdler Sharpe in preparing the section "Aves" for the Zoological Record, and is now at work on the ornithological literature of 1909.

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* Altogether Dr. Sharpe prepared the Reports on "Aves" in twenty-five of the forty-five volumes of the 'Zoological Record.'

XXXVI.—*Letters, Extracts, and Notes.*

We have received the following letters addressed to the Editors:—

Sirs,—Since the publication of my article in the April number of 'The Ibis' (above, p. 285), I have received some further notes on *Pithecophaga jefferyi* from Mr. Willoughby Lowe, communicated to him by Father Llanos, of Manila. It should, however, be understood that Father Llanos received his information from natives, and that it would be unwise to place too much reliance upon its exact accuracy.

"(1). The Eagle sent to London alive was captured in September 1908 by means of a snare.

"(2). The nests of the Eagle are made of small dry branches: they are neither very large nor deep. The sticks are firmly held together by the bird's own excrement. Ordinarily these Eagles lay four eggs, and incubation lasts about twenty-four days.

"(3). The usual food of these Eagles is fish, which is captured along the sea-shore, but they also eat hogs, monkeys, cats, &c.

"(4). Their resort is generally near the shore, in the high rocks and crags.

"(5). After making the nest and during incubation and the rearing of their young they are very fierce; they attack and kill anything that approaches.

"(6). The place in Mindanao where this bird was captured is called 'Sandag, Sarigas.'

"(7). A little time after its capture a snare was laid in the same manner as before, and there came its mate, which must have been the male bird and much larger in size, and, seizing the bait, gave a strong tug, and broke the cord which held the snare, and escaped."

The last paragraph in these notes would seem to throw some doubt on my statement that the specimen recently possessed by the Zoological Society was a female.

My own impression, and that of several others, was that our bird was a male, this opinion being based on the fact that it was practically identical in size with Whitehead's type-specimen (now in the British Museum), which was sexed as a male.

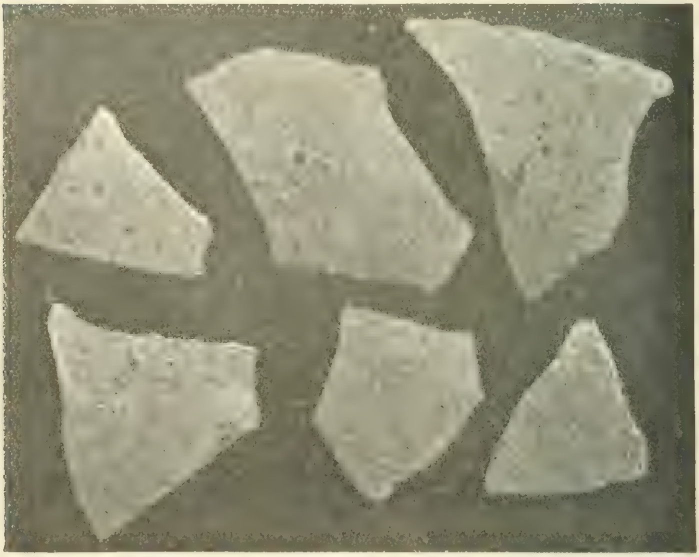
When our bird died it was immediately taken to the Prosectorium, and its entrails were removed for examination by the Pathologist. The latter's assistant assured me that he carefully examined the bird, and that it was unquestionably a *female*; hence the statement in my recent paper. In the light of the notes above given, however, I am much inclined to think that a mistake was made, and that our bird was a male, as at first supposed. Further material will doubtless throw light on this point.

I am, Sirs, yours &c.,
D. SETH-SMITH.

Zoological Society's Gardens,
June 3rd, 1910.

SIRS,—In May 1905 I exhibited at the meeting of the British Ornithologists' Club (see Bull. vol. xv. p. 72) some fragments of fossil egg-shell which had been obtained by the late Mr. Archibald Carlyle when engaged on the Archæological Survey of India. When I purchased them at Stevens's Auction Rooms these fragments were in a small tin box bearing a label "Fossil Egg Shell? Nullas, Kain River, Banda." Mr. W. P. Pycraft supplemented my remarks by a short account of the result of a microscopical examination of the shell, which appeared to be undoubtedly a fragment of the egg-shell of a Struthious bird akin to the modern Ostriches (*Struthio*). Quite recently Dr. C. W. Andrews, F.R.S., has been working on some fossil eggs of Struthious birds, and from his microscopical examination of these fragments has come to the conclusion that they are parts of an egg of a species of *Struthio*, and that in the distribution of the pores on the surface of the shell they are almost identical with eggs of the Somaliland Ostrich (*Struthio molybdophanes*), although possibly the shell is rather thicker than that of any recent Ostrich-egg which has been measured. The Ken or Kain River is a tributary of the Jumna and Banda, in the United Provinces to the south-west of Allahabad. As in recent times no Struthious bird has been known in India, I think it important to place the result of Dr. Andrews's examination on record, and for the sake of reference propose to call the species *Struthio indicus*.

Text-fig. 7.



Fragments of Egg-shell of Indian Ostrich.

The smallest of the seven fragments of shell was sacrificed for the microscopical examination; the photograph (taken to scale) of the other six well shews the arrangement of the pores.

That these fragments may be available for comparison, I have given the box and three of them to the Natural History Museum, two to the Hon. Walter Rothschild for the Tring Museum, and the other I am sending to the Calcutta Museum.

I trust that this small matter may direct the attention of

Indian palæontologists to the importance of keeping a good look out for the fossil remains of this group of birds.

Yours &c.,
EDWARD BIDWELL.

SIRS,—My collector, Mr. J. P. Rogers, has sent me from the Tinami Gold Fields, Northern Territory, a skin of *Aphelocephala nigricincta* (Mathews, Hand-l. B. Austral. p. 87), which he obtained on March 27th, 1910. This locality is 700 miles north of Missionary Plains, Macdonald Ranges, Central Australia, where the type of the species was obtained by Mr. G. A. Keartland.

Mr. A. J. North described this bird as *Xerophila nigricincta* in 'The Ibis' of 1895 (p. 340). He also figured it in the 'Report of the Horn Scientific Expedition,' Aves, plate vii. (1896). The nests and eggs are described in the same Report (p. 83).

This is the first record of this species since it was described fifteen years ago, and it is also from a new locality.

The soft parts are: "Bill leaden-brown; iris white; feet and tarsi leaden-blue."

The stomach contained fragments of beetles and seeds, as well as a little grit.

I am, Sirs, yours &c.,
GREGORY M. MATHEWS.

Langley Mount,
Watford,
August 3rd, 1910.

SIRS,—Readers of 'The Ibis' will, I think, be interested to know that in our lagoons last spring was shot an adult female of the Shoveller (*Spatula clypeata*) *wholly white.* This bird was seen for several days on the wing at all hours, beating up and down over the large salt-marshes which lie in the Province of Padua; but, owing to its excessive shyness, it was always far out of shot, and people were unable to secure it. But on the morning of 14th of March last an ardent sportsman, Dr. Albert Guillion Mangilli, had the good fortune to kill it in the Valle Sacche di Millecampi. It is a rather small female; the wing is less than 9 inches. The soft parts are coloured as follows:—Bill dirty orange-yellow; eyes bright yellow; legs, toes, and webs orange. It is silvery white on the head and neck, a little shaded with yellowish on the rest of the body.

I think this variety is very scarce, and do not remember to have seen such a specimen in any collection.

I take the opportunity to state that in the Collection Contarini (at Venice) there is an example of the very rare cross between the Mallard and the Shoveller, the only one, I believe, preserved in our collections. It is a male, very well characterised, shot in the wild state on the lagoons of Venice more than sixty years ago, not well stuffed, but very well preserved, so that it would be opportune to make it up again. The bill is not so broad as in *Spatula clypeata*, and it has the green of the head and neck, shoulder and back of *Anas boscas*, but it wants the posterior black band. The comb-like teeth are much less developed than in the Shoveller and the feet are smaller than those of the Wild Duck.

The Mallard is common in winter and breeds occasionally with us. The Shoveller does not breed in Italy; it is abundant enough in winter and on passage, particularly during the spring migration, but it appears to be somewhat local in its distribution, and is more particularly a freshwater Duck.

Yours &c.,

Count E. Arrigoni degli Oddi.

Ca' Oddo (Monselice-Padova),
July 31st, 1910.

Progress of the Expedition of the B.O.U. into Central New Guinea *.—The latest letters received from Mr. Goodfellow and the other members of the B.O.U. expedition to New Guinea are dated June 4th. Up to that time we are sorry to say little further progress had been made. This was mainly owing to the great difficulties experienced in conveying the stores from the base camp at Wakatimi on the Mimika

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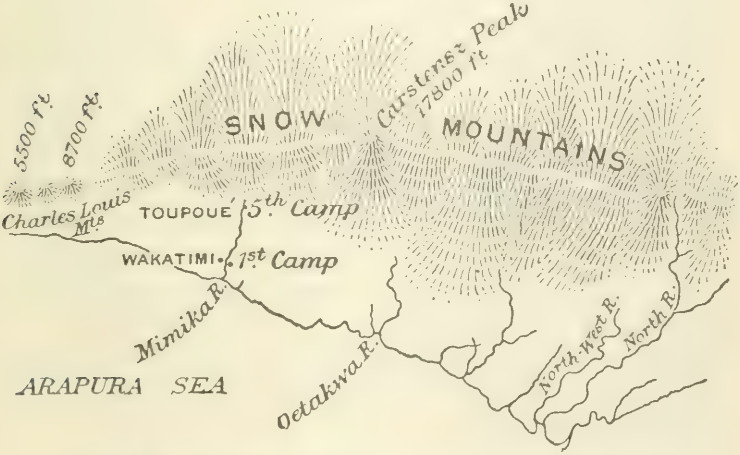
* For previous notices on this subject, see 'Ibis,' 1898, Jub. Suppl. p. 12; 'Ibis,' 1909, pp. 194, 715; 'Ibis,' 1910, pp. 223, 377, 570.

River to the new camp at Toupoué at the foot of the snow-mountains.

In one of his last letters Mr. Goodfellow writes:—

"It may seem to you that so far we have progressed very little. In a sense this is true, but I must tell you that at home it is impossible to realize the impassable nature of the country and the difficulties which have to be overcome. This part of the coast was entirely unknown, but it was supposed that the mouth of the Mimika was the best place to land at, and that this river came from the highest snow-mountains. We now know that such is not the case. All the rivers on this part of the coast, though they come from an easterly direction, turn away to the west in the interior, so that the highest part of the snow-range lies far east of the head-waters of the Mimika. There is no doubt whatever that the Oetakwa River drains the water from the snows of Carstensz Peak. Looking at that mountain from the sea you would think that it lay directly behind the Mimika River; but, as we now know, it is nearly fifty miles off along the base of the range, and there are many big rivers to be crossed before we get to it.

Text-fig. 8.


5500 ft.
8700 ft.
SNOW
Carstensz Peak
17800 ft.
MOUNTAINS
Charles Louis Mts
TOUPOUE
5th Camp
WAKATIMI
1st Camp
Mimika R.
ARAPURA SEA
Oetakwa R.
North-West R.
North R.

Outline Map of part of New Guinea coast near the Mimika River.

"It is, of course, quite impossible, now that such an extensive settlement has been made at Wakatimi, to change our route, so we shall be obliged to go overland from our camp at Toupoué. Dr. Marshall is now engaged in cutting a trail from there to the first big river—the Kamura,—and we have a large canoe on that river ready to ferry us over. Some of us have explored the country for a long way to the east of that river, so that we now know exactly where we have to go."

Mr. Shortridge, whose first collections have arrived in England and are now under examination, has been suffering much from fever, and has been obliged to go to New South Wales for a few months to recruit his health. Mr. Claude Grant, who has been sent out to take the late Mr. Stalker's place, left England on June 18th, and will pick up at Singapore two well-trained Dyak collectors, whose services have been kindly lent to the Committee by Mr. H. C. Robinson, the Director of the Kuala-Lumpur Museum.

During the months of April and May Mr. Goodfellow was chiefly engaged in obtaining a permanent staff of coolies and in superintending the movement of the stores. Mr. Woolaston passed most of the time in charge of the base-camp at Wakatimi, making occasional visits to Toupoué, which was the headquarters of Mr. Shortridge, Captain Rawling, and Dr. Marshall. The camp there is a far healthier spot than Wakatimi, the water being clear, while at the mouth of the river it is foul and muddy.

With great satisfaction the Committee are able to announce that the Government have agreed to support the Expedition by making a grant in aid of its Funds of £1000. This is most gratifying, as indicating not only a recognition of the importance of the undertaking, but also a welcome sympathy with its objects.

Adding the amount raised by private subscriptions (about £4500) the Committee will thus have £8500 at their disposal. But farther assistance will be gratefully received by the Treasurer (Mr. Fagan), in order to carry on the exploration of the unknown highlands of New Guinea for as long a time as possible.

Habits of the Honey-Guides.—In Col. Patterson's recently published volume 'In the Grip of the Nyika' we read (p. 223) as follows:—

"As we were marching quietly along soon after leaving Kurseine, my guide, Papai, suddenly showed signs of great excitement, and drew our attention to a tiny bird, fluttering and twittering in front of us in a very curious fashion. On asking him through Abudi what its antics meant, he replied 'He is telling us where to get honey.' I was naturally very much interested, and when Papai asked me if I would halt the *safari* for a little, so that he might go and rob the nest, I willingly consented and myself accompanied him, who now relinquished to the tiny bird his *rôle* of guide. The little thing, which was barely the size of a Wren, twittered and chirruped and fluttered along from one bush to another, looking round pertly all the time to see if we were following. In this way it led us on for about a quarter of a mile, until at last it came to a dead stop, and took up its position on a tree, where it remained motionless.

"Papai then told us that we were now close to the honey, and must be on the look-out for the bees coming and going. In a few seconds we discovered them entering a tiny hole in a tree not a dozen yards from where our cunning little guide had stopped.

"We very soon had an opening made sufficiently large for Papai to thrust his hand into the hollow, and in this way he removed several honeycombs full of the most delicious golden honey. He took not the slightest notice of the bees, though they flew all round him, and some of them stung him. We were much pleased with our spoil, and left a fair share of it behind as a reward for the trusty little bird who had led us along so skilfully."

Birds of North-east Greenland.—In Dr. J. Lindhard's account of the Danish Expedition to N.E. Greenland of 1906–8 (Geogr. Journ. xxxv. p. 541) we are told that the "ornithological booty of the Expedition was unexpectedly abundant." Particular attention was paid to the breeding-places of such species as *Tringa canutus, Calidris arenaria, Phalaropus fulicarius, Larus sabinii, L. eburneus, Anser leucopsis*, and *Somateria spectabilis.* Of all these species specimens not only of full-grown birds, but also of eggs and of young in different stages of development were procured. Of *Calidris arenaria* 24 eggs were obtained, and a breeding-place of thirty pairs of *Tringa canutus* was discovered. A specimen of *Fuligula marila,* a species new to Greenland, was brought home.

New Work on Australian Birds.—Many of our readers are already, no doubt, aware that Mr. Gregory M. Mathews, M.B.O.U., has undertaken the important task of preparing a new illustrated work on the Birds of Australia. By the prospectus, just received, we are informed that the first part of it will be published in November next by Messrs. Witherby and Co. Mr. Mathews, who has lived all his life in Australia, and has been a close student of its bird-life for many years, is well qualified for this arduous piece of work, concerning which full particulars are given in the prospectus. As planned it will consist of eight volumes in royal quarto, with coloured figures of every species.

Departure of Mr. Robinson.—Mr. Herbert C. Robinson, Director of the Museums of the Federated Malay States, who has been in England during the past summer, sails for the East again by the 'Mongolia' on Oct. 7th, to take up his former position. He is planning an exploration of the high mountains of Central Sumatra, which he believes have hardly been touched by Ornithologists, and are likely to produce birds not found in the lower districts. If all goes well he hopes to be able to start on his expedition in April next year.

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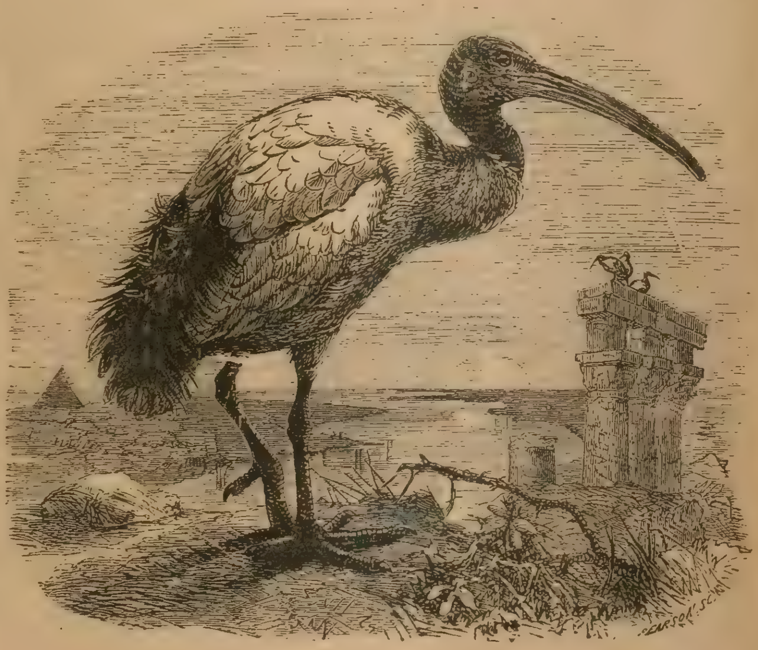

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2. 'The Annals of Scottish Natural History.' (No. 72. 1909.)
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4. 'Avicultural Magazine.' (3rd series, Vol. i. Nos. 2, 3. 1909 10.)
5. 'Bird Lore.' (Vol. xi. No. 6. Harrisburg, 1909.)
6. 'British Birds.' (Vol. iii. Nos. 6, 7, 8. 1909-10.)
7. 'Bulletin of the B. O. Club.' (Vol. xxiv. Nov. 1909. Report on the Immigrations of Summer Residents in the Spring of 1908, &c., &c.)
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9. Chapman, F. M. Camps and Cruises of an Ornithologist. (New York, 1908.)
10. 'The Condor.' (Vol. xi. Nos. 5, 6. 1909.)
11. Festa, E. Nel Darien e nell' Ecuador. (Turin, 1909.)
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18. 'Ornithologisches Jahrbuch.' (xx. Hefte 5, 6. 1909.)
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30. 'Archivum Zoologicum.' (Vol. i. No. 11. Budapest, 1910.)
31. 'The Auk.' (Vol. xxvii. No. 1. 1910.)
32. 'Avicultural Magazine.' (3rd series, Vol. i. Nos. 5, 6. 1910.)
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47. MACK, AMY E. A Bush Calendar. (Sydney, N.S.W., 1909.)
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64. 'The Auk.' (Vol. xxvii. No. 2. 1910.)
65. 'Avicultural Magazine.' (3rd series, Vol. i. Nos. 7, 8. 1910.)
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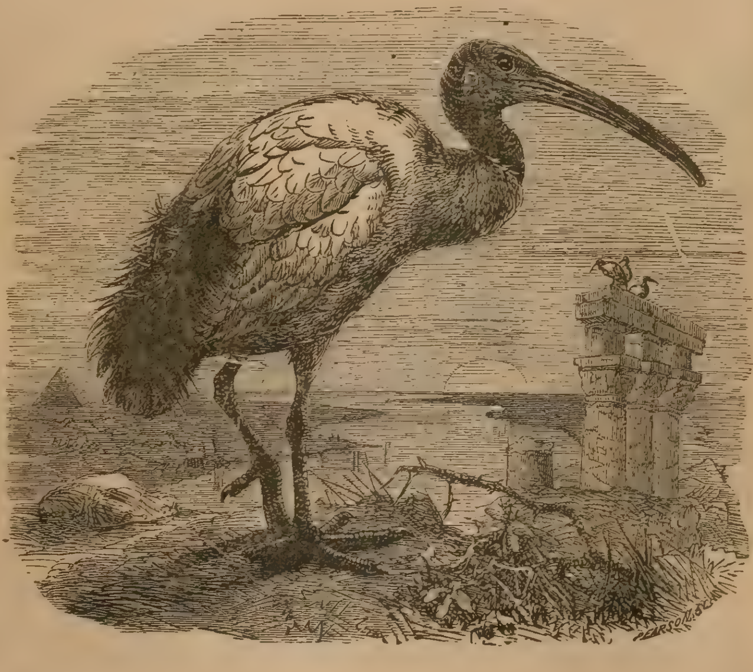

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93. 'Abridged Check-List of North-American Birds.' Third Edition. (New York. American Ornithologists' Union. 1910. 77 pp.)
94. 'Annals of the Transvaal Museum.' (Vol. ii. No. 1. 1910.)
95. 'Avicultural Magazine.' (3rd series, Vol. i. Nos. 10–12. 1910.)
96. 'Bericht der Senckenbergischen Naturforschenden Gesellschaft.' (Heft. 3, 4. Frankfurt, 1910.)
97. 'British Birds.' (Vol. iv. Nos. 2-5. 1910.)
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